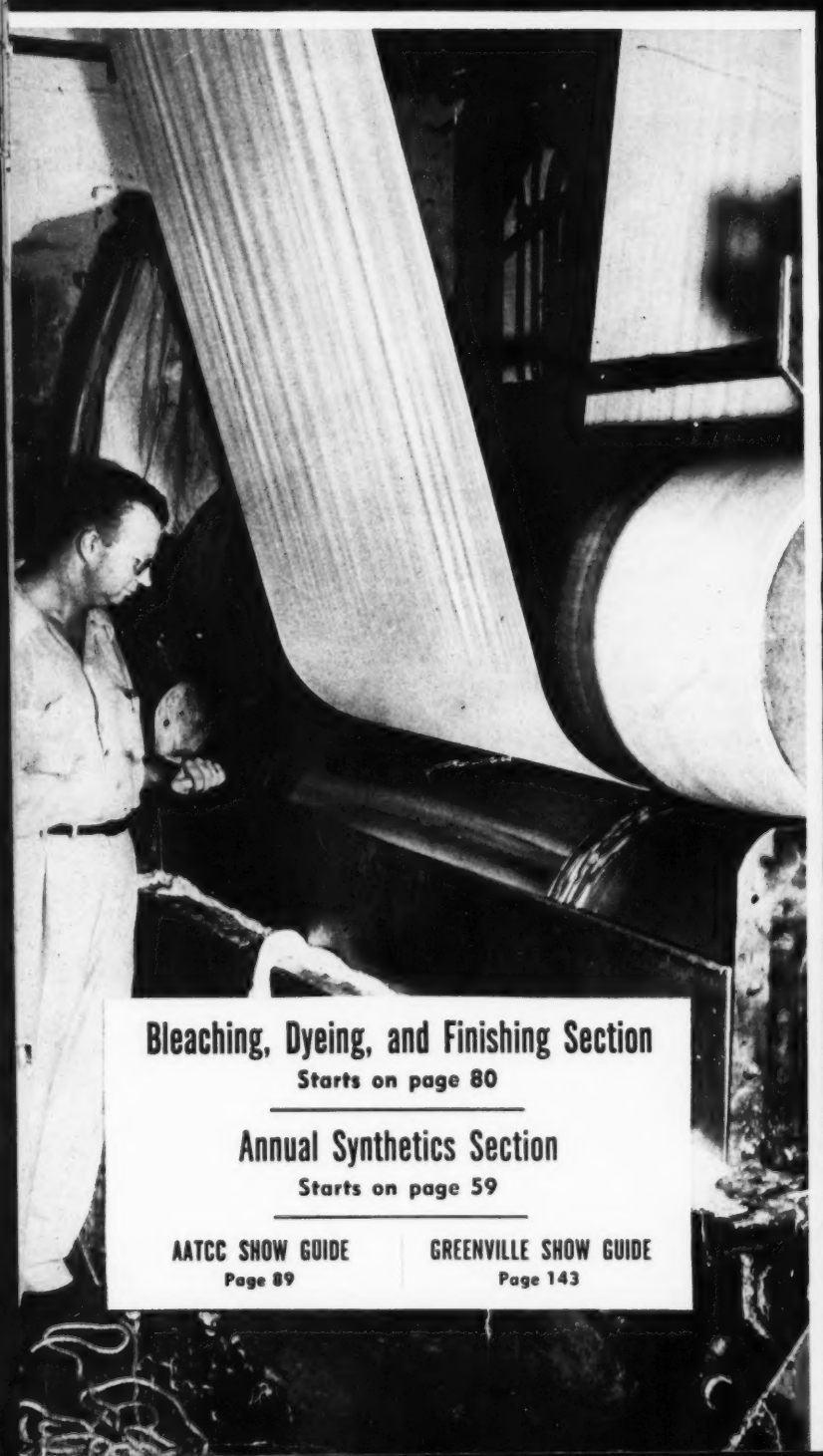
TEXTILE WORLD



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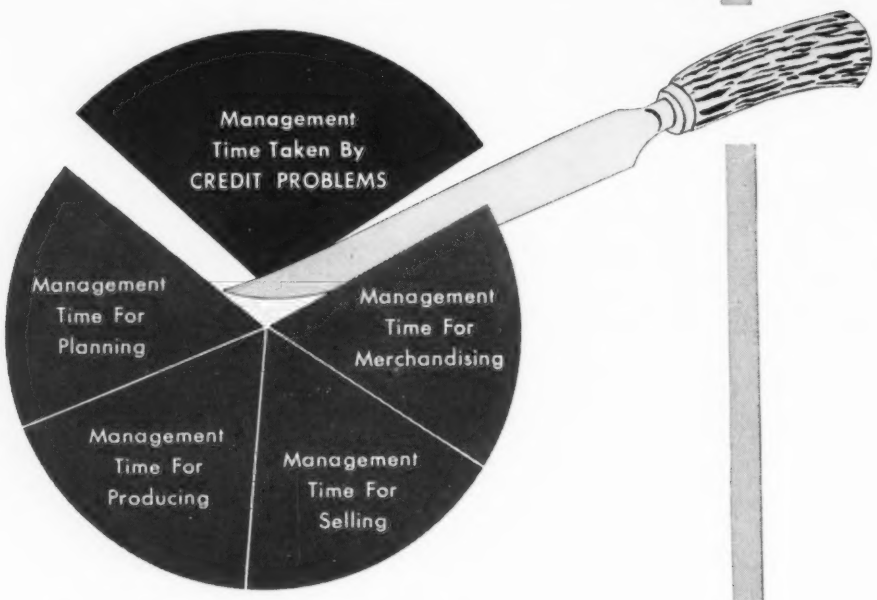
Management Time Taken By CREDIT PROBLEMS
Management Time For Planning
Management Time For Merchandising
Management Time For Producing
Management Time For Selling

Part-Time Management Is Dangerous!

Time spent on credit checking, non-productive hours on collection problems, worry and aggravation brought on by credit losses – all these things cut down on your management time and efficiency. They steal vital time needed for jobs like planning your line, producing, selling and merchandising.

Don't allow part-time management to jeopardize your business. Let experienced credit personnel at Commercial Factors Corporation be your Credit Department. We do away with all your credit and collection costs – and protect you from bad debt losses.

By combining sound financial advice and useful marketing information with progressive factoring service, we have helped develop profitable, additional business for many of our clients.

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1. provides you with factual information on sales opportunities

2. increases actual sales by permitting longer selling terms

3. enables you to sell more goods—without credit problems

4. stops all credit and collection costs

5. eliminates your accounts receivable ledgers

6. enables you to earn cash discounts

7. provides you with funds for advantageous purchases

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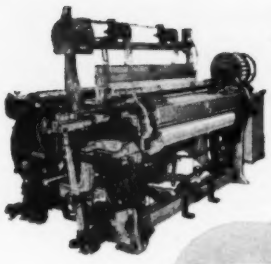
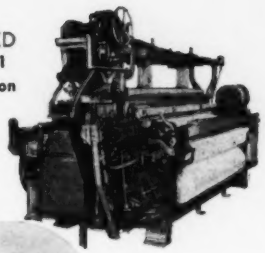


Model X-2

Model XD
with 2X1
Box Motion

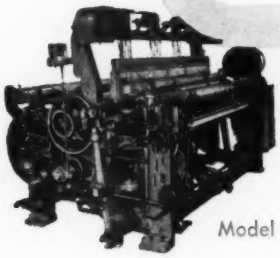


NEW

DRAPER LOOMS

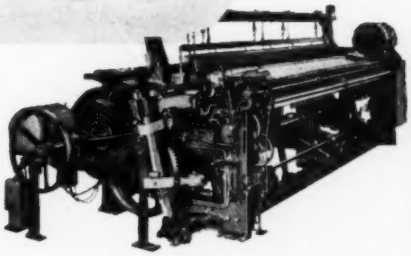
OFFSET

Shrinking Mill Margins



Model XP

Model XL



Old looms, at best, fall short of today's requirements.

Shrinking mill margins demand increased output per unit, improved cloth quality, utilization of added flexibility, and reduction of costs.

New Draper Looms lead the way with these proven advantages . . . *advantages that are further emphasized by the more than two thousand new parts adapted to X SERIES LOOMS in the last eighteen months.*

Insure your competitive position today and tomorrow with new X SERIES DRAPER LOOMS.

DRAPER CORPORATION

HOPEDALE, MASSACHUSETTS

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

For more information, write direct or use Reader Service post card.

Mathieson Chlorine: *worth its salt*

Row upon row of mercury cells characterize the uniform high purity of Mathieson chlorine. These cells decompose a salt solution by electrolysis to form a sodium amalgam and wet chlorine gas. Subsequent processes dry the gas, liquefy and cool it, resulting in chlorine approximately 99.9% pure. Above is one of five producing units from which Mathieson supplies quality chlorine to industries from Canada to the Gulf.

Consistent product quality is typical of all Mathieson chemicals. In addition, Mathieson offers consumers the protection of multi-plant production facilities . . . 3 major alkali plants, 7 sulphuric acid plants, 6 caustic soda plants, 3 ammonia plants . . . as well as practical technical assistance with chemical handling and application problems.

In planning your chemical requirements call in your Mathieson representative. Perhaps you can buy to better advantage from one of America's largest producers of basic industrial chemicals.

OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION
BALTIMORE 3, MARYLAND

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THE Long-Range VIEW

Why We Are Being Outsmarted

Who now has money to spend for textiles?

What impulses do they spend money to satisfy?

On this page last month, we discussed the painful fact that the textile industry is losing millions of dollars each year by its poor competition with other industries for consumer dollars spent on nonessentials. The food and automobile industries in particular have done better than the textile industry, taking $3 extra to our $1 extra. Housing has taken $2 extra to our $1.

This month, we'd like to explore some of the reasons for the textile industry's poor showing in this competition.

Who Has the Dollars?

Much has been said in late years about the leveling out of income. Families earning subsistence incomes (up to $3,000 a year) have dropped from about 60% of the total families in 1939 to 35 to 40% in 1951. Better than 80% of all income is now in the hands of manual, clerical, and administrative workers (carpenters, bricklayers, textile workers, typists, file clerks, bookkeepers, etc.)

A conclusion drawn by Peter W. Webb, of Courtaulds (Canada), quoted on this page last month, from these figures and the facts given in the opening paragraph here is:

The textile man . . . "has been styling for and catering to a type of person important in the prewar market but who, today, has been replaced in terms of purchasing power by people with different backgrounds and, in many respects, different requirements."

Failure No. 1 of the textile industry in the postwar years, then, has been the fact that it has not cashed in on this new purchasing power as successfully as other consumer industries.

What Do They Want—and Why?

As listed here last month, of a total increase of about 33% in spending, consumers have chosen to increase their purchases as follows: food 48%, automobiles 46%, housing 33%, household equipment 19%, and clothing and shoes 18%.

Recognizing that the lion's share of this increased spending came from worker families, it only makes sense to ask why these consumers chose to buy more food, automobiles, houses, and household equipment than textiles.

No one will know the answers, of course, without exhaustive market research. However, two or three things seem obvious:

1. Nonessential spending is basically impulse buying, in the sense that a desire is built up in the consumer to own and use the products bought.

2. In their impulse buying, consumers chose products to satisfy urges of (a) appetite or enjoyment, (b) usefulness, or convenience, and (c) social prestige.

3. The most-bought nonessential products were for the use, enjoyment, and prestige of the family rather than the individual.

Failure No. 2 of the textile industry, then, is that it has not been successful in persuading worker families that more textile products will add to the enjoyment, convenience, and prestige of the family.

Smart Merchandising Needed

The truth seems to be that people who deal in textiles are following out-of-date methods. Their eye just is not on the proper market with the proper products and the proper sales appeal. While we flounder around with time-worn practices of "dumping," "sales," and other price-cutting gimmicks, the food, automobile, and housing industries go right on raising prices and outselling us. Who ever heard of a food sale, an automobile sale, or a housing sale?

We might be more successful in attracting worker-family dollars if we used the money now lost in sales and dumping to build up in families a desire for more textiles.

As a quick check on promotion directed at consumers, we looked over the ads in three leading consumer magazines. By classifying the consumer appeals of the ads, we found that food, automobile, and textile-products advertisers used the following appeals in the following percentages of their ads:

Appeal	Food	Automobile	Textile
Appearance, or eye appeal	58 (%)	100 (%)	75 (%)
Usefulness	42	0	50
Enjoyment	58	83	25
Prestige	5	68	0

Of course, such a listing has no value except to emphasize this fact: In their appeals to consumers for impulse sales, textile-products advertisers are all but ignoring the two powerful urges of enjoyment and prestige. The food and automobile industries, which have succeeded in getting such a large additional part of the consumer's income dollar, lean heavily on these two appeals to influence impulse sales.

Every textile man, whether or not he deals in direct consumer products, has a very important stake in this market. Large-scale, intelligent appeals to consumer impulse sales this time last year might have headed off the "famine" we've had.

O. M. Thomas

Permanent Shape

FOR THE SHAPELY
BY TURBO PENETRATION

Those lovely stockings will keep their shape permanently — they've been boarded by Turbo Penetration. It's the sure way of heat-setting or steam-setting synthetics.

Production-proved Turbo Setting Cabinets provide alternating cycles of pressure and vacuum to insure heat penetration and thorough drying. Stockings and garments are put on special forms — yarns and fabrics in containers or on racks — and move in and out of the setting cabinets on a collapsible conveyor. Movement is even, gentle and quiet.

It's thoroughly "set" when it's "set" by Turbo equipment. Temperatures can be controlled, time can be controlled. Operation is automatic and accurate — takes the guess-work out of setting.

Turbo "penetration" is a feature of many special-purpose machines now making money in leading mills. Turbo "penetration" may solve your setting problem — talk to a Turbo Representative soon — use the coupon for quick action.

TURBO MACHINE COMPANY
LANSDALE, PA., U.S.A.

Southern Representative: F. W. Warrington Co., Charlotte, N. C.
"Builders of Precision Machines for a Quarter Century"

Turbo Cabinet is adaptable for wet or dry heat, under pressure or vacuum, for presetting or finishing. Automatic timing and controls take guess-work out of operation — save time, labor and merchandise.

TURBO
SINCE 1929

Send literature or information on Turbo Machine for:

- ☐ Preboarding/Boarding Nylon Stockings
- ☐ Sweater Setting
- ☐ Fabric Setting
- ☐ Crimp Setting
- ☐ Yarn Processing

Have Turbo Representative call to discuss special-purpose machine for following application:

.....

NAME .....

COMPANY .....

ADDRESS .....

For more information, write direct or use Reader Service post card.

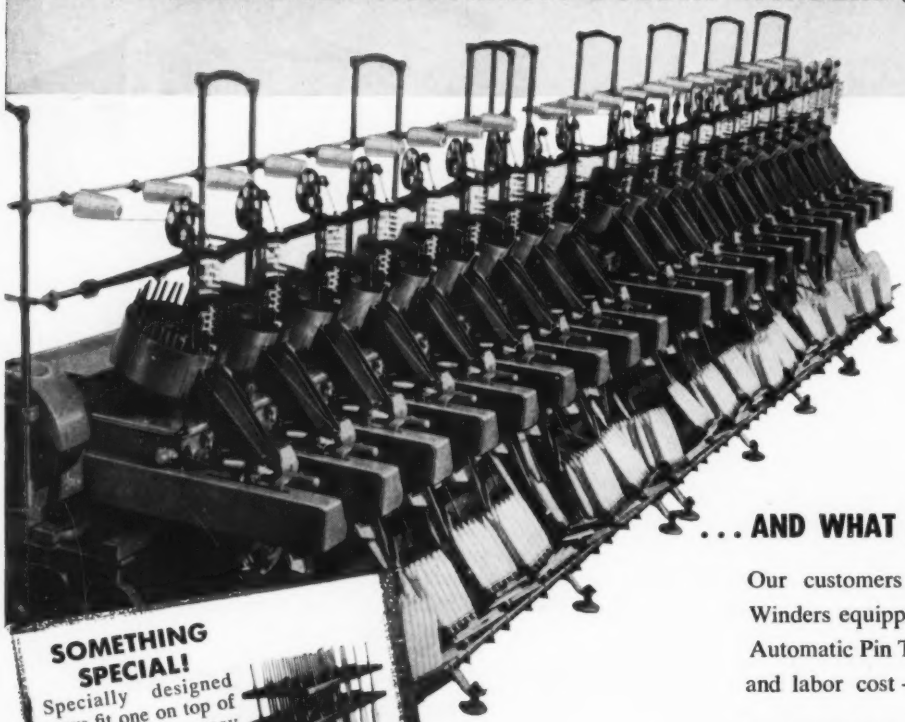
IT'S COMPLETELY...

AUTOMATIC!

the NEW AUTOMATIC PIN TRAY LOADER

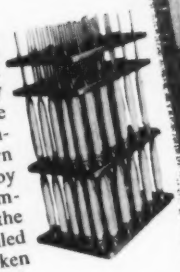
for use with

SCHWEITER AUTOMATIC BOBBIN WINDERS (TYPES MS, MSK)



SOMETHING SPECIAL!

Specially designed trays fit one on top of the other for easy transportation to the looms. During the entire process, the yarn is never touched by the operator, completely eliminating the possibility of soiled yarn and/or broken filaments — AUTOMATICALLY!



. . . AND WHAT A REACTION!

Our customers tell us their Schweiter Winders equipped with the efficient, fully Automatic Pin Tray Loader reduces waste and labor cost — ***AUTOMATICALLY!***

. . . NO WONDER!

Each winding unit has an individual pin tray, 8¼" x 13-2/4", holding 50 bobbins! The loader is operated by the winding unit itself so that all the pins are filled in rotation with fully wound bobbins. When the pin tray is full, the winding unit stops—***AUTOMATICALLY!***

SCHWEITER LTD.

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Exclusive Agents for the United States and Canada

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WHITINSVILLE, MASSACHUSETTS

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LINK-BELT COMPANY
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(or your nearest Link-Belt office)

Please send a copy of your new Silent Chain Data Book No. 2425.

Name .....
Position .....
Firm .....
Address .....
City ..... Zone ..... State .....

For more information, write direct or use Reader Service post card.

This new Robbinette* Ring has a finish which is the result of many years of cooperative research between Saco-Lowell technicians and the steel manufacturing industry. Testing and trial run reports show that its all-around performance is far superior to that of any other spinning ring.

This Saco-Lowell Robbinette* Ring is suitable for cotton, wool, paper, glass and all synthetic fibers and blends. Robbinette* Rings break in rapidly and easily — and once in operation, they increase the life of the traveler and decrease the number of ends down per MSH.

Robbinette* Finish is now standard on all of our rings for both spinning and twisting without extra cost.

***A product of the Pawtucket Spinning Ring Company, the Ring Department of Saco-Lowell Shops.**

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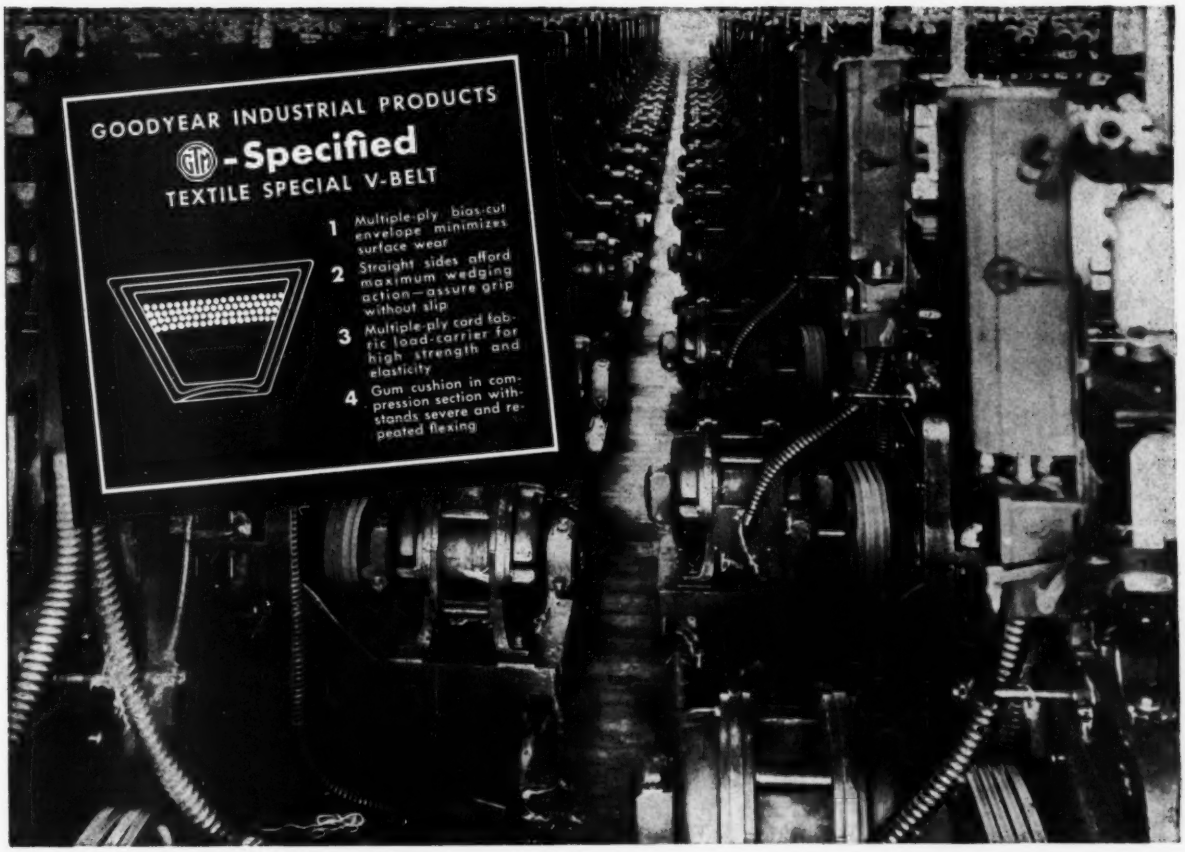

GOODYEAR INDUSTRIAL PRODUCTS
GT-Specified
TEXTILE SPECIAL V-BELT
1 Multiple-ply bias-cut envelope minimizes surface wear
2 Straight sides afford maximum wedging action—assure grip without slip
3 Multiple-ply cord fabric load-carrier for high strength and elasticity
4 Gum cushion in compression section withstands severe and repeated flexing

BUILT TO DELIVER THE GOODS

—TEXTILE SPECIAL V-BELTS

MANY V-belted drives in textile mills suffer from severe overloads, high starting torques, frequent misalignment and occasional abuse. These conditions combine to produce uneven load-distribution and accelerated wear which result in early failure of most conventional belts.

To minimize these premature failures, the G.T.M.—Goodyear Technical Man—created the Textile Special V-Belt, muscled with multiple plies of cord fabric. This type of load-carrier gives the belt great strength plus enough elasticity to tolerate misalignment much more than other constructions. And the bias-cut fabric cover minimizes surface wear by transferring the load directly to the inner tension carrying cords.

Textile Special V-Belts are designed to deliver the goods for you. Their maximum service with minimum maintenance has been fully proved. One mill reports—"Outlives any belts we've tried." Another—"Less time lost for take-ups and adjustments." For details see your Goodyear Distributor, or the G.T.M. Or write Goodyear, Industrial Products Division, Akron 16, Ohio.

YOUR GOODYEAR DISTRIBUTOR *can quickly supply you with Hose, Flat Belts, V-Belts, Packing or Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."*

GOODYEAR

THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

NEW!!

AMCO
MODEL 35
HUMIDIFIER

Ideally suited to areas of light heat concentration

THE NEW Amco Model 35 Humidifier is the perfect unit for storage areas, laboratories and miscellaneous localized applications where the cost of other types of humidification might be prohibitive.

When in operation, a precision, propeller-type fan draws room air into the rear of the unit and forces it forward around the periphery of an atomizing disc which rotates at high speed. The air stream from the fan carries the atomized water into the room where it quickly evaporates in the surrounding atmosphere.

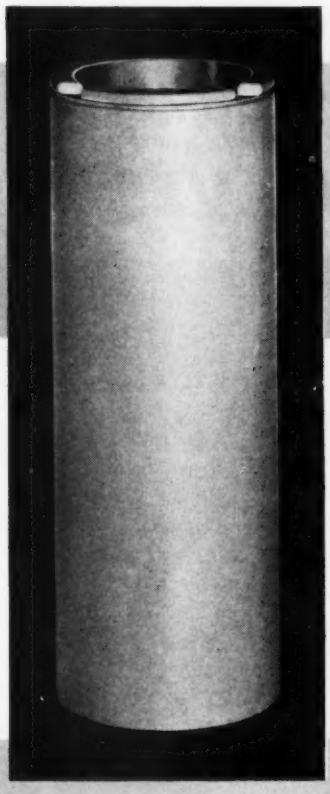
Housed in stainless steel, Amco Model 35 Humidifier is simple, efficient and reliable.

Check these Quality Features

- only simple water and electrical connections
- positive, directional, long-throw air-vapor jet
- single motor drives both fan and disc — minimizing operating costs
- almost complete elimination of dirt collection because small atomizing disc has no serrations around its periphery to collect dust and lint
- simplicity of construction — plus smooth surfaces assure minimum maintenance
- can be adjusted to normally evaporate from 0 to 22 pounds of water per hour while circulating 1200 cubic feet of air per minute.

AMCO
AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA • BOSTON • CAMDEN • CHARLOTTE • AFFILIATED WITH GRINNELL COMPANY, INC.



WHY COSTS GO DOWN AND PRODUCTION GOES UP WITH

Spaulding

PARTS AND EQUIPMENT

SPAULDING FIBRE COMPANY, INC. fabricates textile products from hard Vulcanized Fibre and Laminated Phenolic Plastics of its own manufacture. In their numerous types and grades, these basic materials exhibit a variety of unique property combinations. Many of these are especially suited to textile applications and, in fabricated parts, help improve the textile product, reduce maintenance and replacement costs, and permit more efficient machine operation.

THE HEADLESS PACKAGE TUBE, illustrated at left, is a case in point. It is made from a special grade of Laminated Phenolic Plastic that combines full resistance to the crushing strength of synthetic yarns, with extreme light weight, a snag-free finish, freedom from oxidization, and uniform heat distribution in the steaming operation.

OTHER SPAULDING PRODUCTS for the Textile Industry include various types of spooling caps, redraw caps and pirn caps, some of which are shown at right. Another important Spaulding product is the Spaulding Bobbin, dynamically balanced for greatest efficiency. Spaulding also fabricates separator blades, loom parts, sizing tubes, lap rolls, Kelly rolls, and materials handling equipment.

SPAULDING FIBRE COMPANY, INC., TONAWANDA, N. Y.

Call Your Nearest Spaulding Branch Office or Mail Coupon for Full Information

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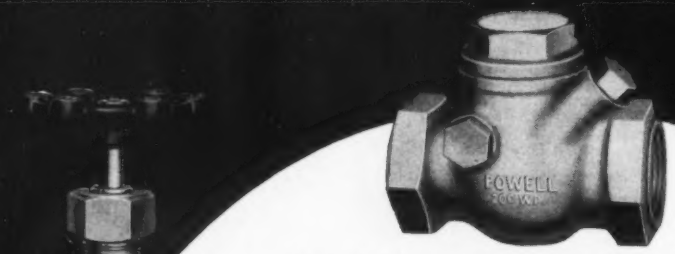
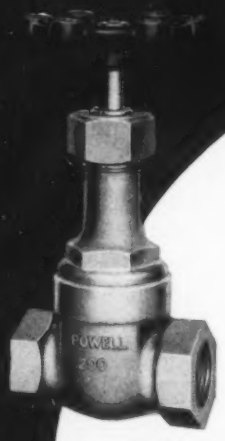
NOW! For Immediate Delivery!

MONEL* and NICKEL VALVES



Screwed-in Cap, screwed end Swing Check Valve for 200 W. P.



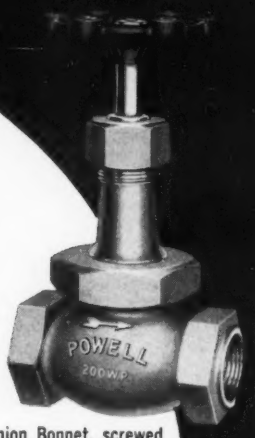
Screwed-in Bonnet, Screwed end, rising stem Gate Valve for 200 W. P.

HERE ARE shown a few Powell Monel Metal and Nickel Valves in stock, that can be shipped immediately on receipt of order. They are made with screwed or flanged ends, for 150 and 200 W. P. at 500° F. Sizes range from ¼" to 30".

Solid or double wedges for Gate Valves are interchangeable, precision-fitted, and accurately guided throughout their entire travel.

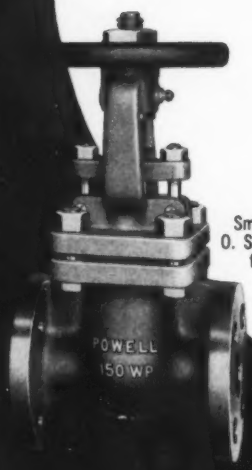
These valves conform to latest A.S.A. and M.S.S. Standards. End flanges will be furnished with plain faces. Raised, ring joint, male and female, or tongue and groove faces can be supplied on special order.

For the full details write The Wm. Powell Company
Cincinnati 22, Ohio

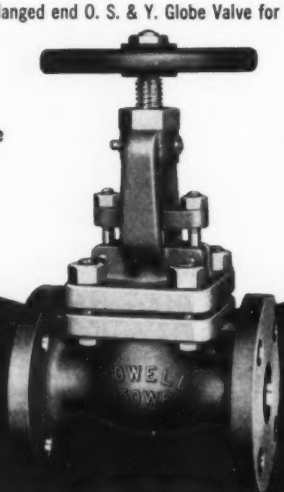


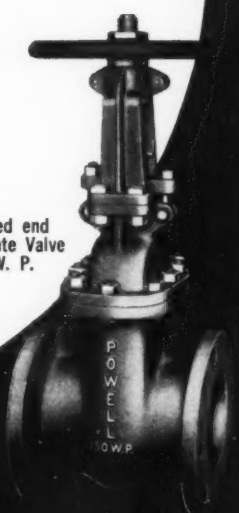
Union Bonnet, screwed end Globe Valve for 200 W. P.

Small flanged end O. S. & Y. Globe Valve for 150 W. P.



Small flanged end O. S. & Y. Gate Valve for 150 W. P.





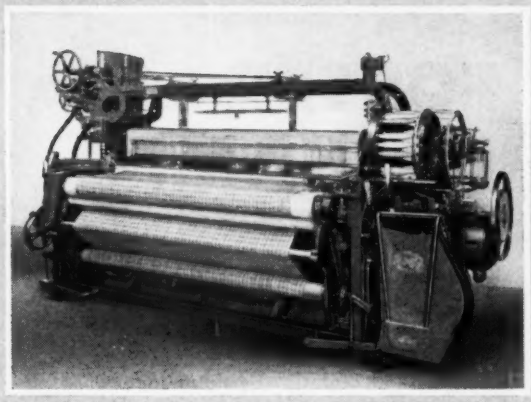
Large flanged end O. S. & Y. Gate Valve for 150 W. P.

*Registered trade name of The International Nickel Co.

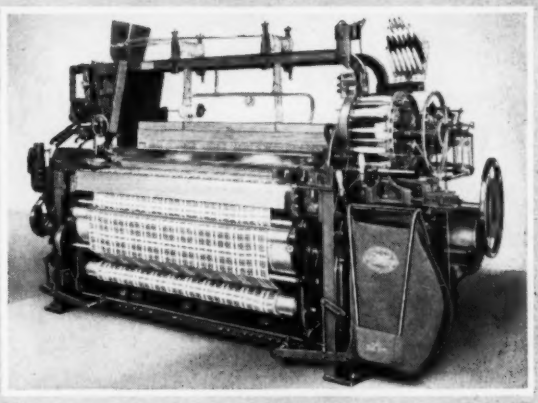
Powell Valves

108th year

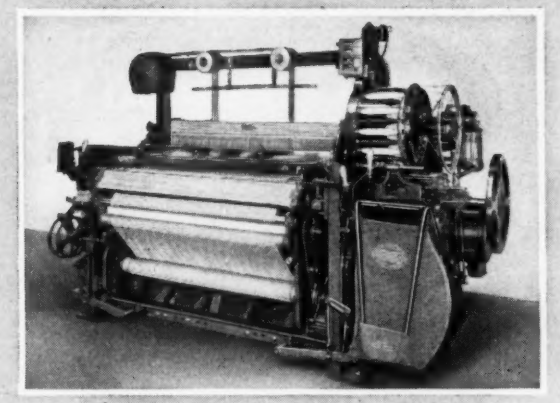
M-P Looms can be built in widths varying from 48″ up to and including 92″ between swords.



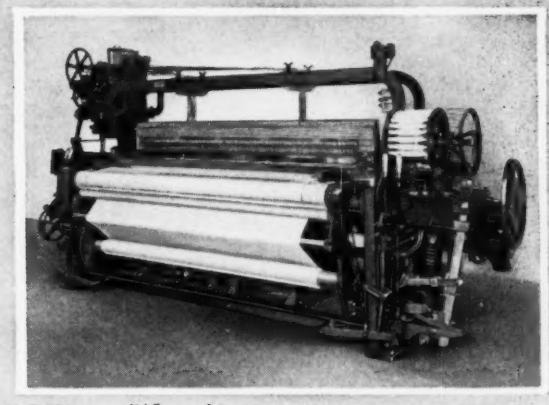
M-P 25 Harness (4/10″ space) 4 x 1 box AUTOMATIC HEAD LOOM



M-P 20 Harness (15/32″ ga.) 4 x 1 box AUTOMATIC DOBBY LOOM

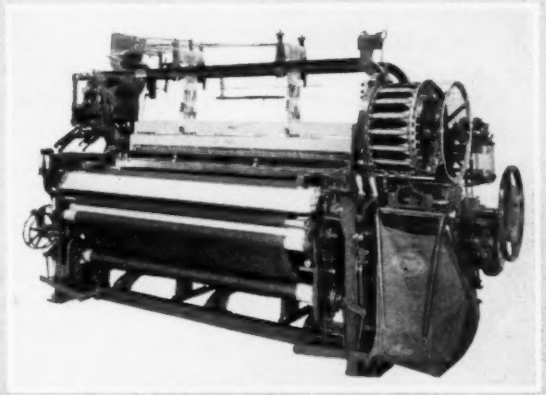


M-P 4 Harness 2 x 1 box AUTOMATIC UNDERCAM LOOM



M-P 20 Harness (½″ space) 2 x 1 box AUTOMATIC FILLING MIXING HEAD LOOM

However You Measure Profits... C&K's New M-P Looms *can give you the Profit-Factors you need*



M-P 20 Harness (15/32″ ga.) 2 x 1 box AUTOMATIC DOBBY LOOM

M-P means **Multi-Purpose.** And **M-P** also stands for many other advantages, all adding up to **More Profit,** such as:

More Production per loom, and per operator, due to increased work-assignments . . . higher speeds . . . fewer yarn breaks . . . fewer mechanical failures.

More Protection against inferior quality of cloth . . . expensive sewing . . . sudden changes in market requirements.

More Precision in loom-building means fewer mechanical failures . . . less down-time.

Maintenance Pared by improved loom-design . . . simpler and sturdier construction.

More Product-possibilities . . . **M-P** Looms can handle wider range of cloth-constructions . . . and they are readily convertible right in the mill.

See C&K without delay . . . and watch this page for more information on why **M-P** means **More Profit** to any mill.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

Crompton & Knowles
LOOM WORKS

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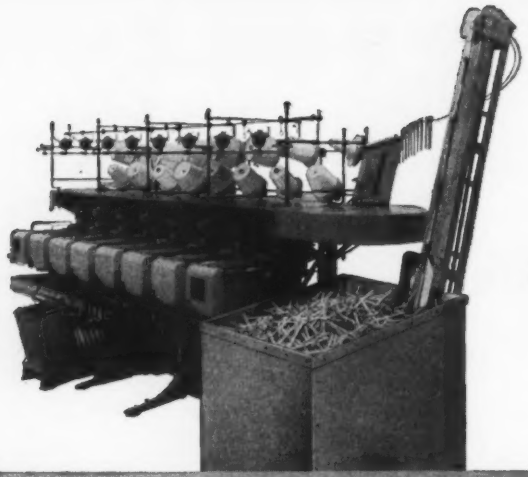


FOSTER-MUSCHAMP

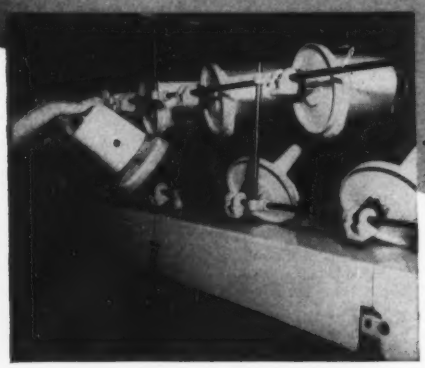
MODEL 66

Automatic Filling Winder

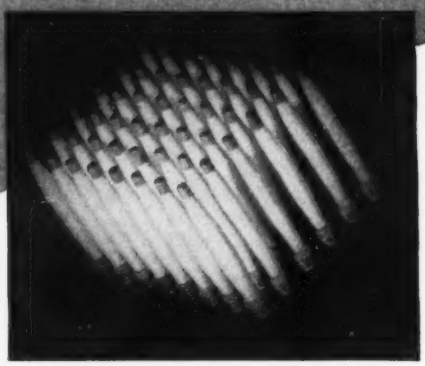
(Manufactured in Westfield, Mass.)

Complete machine with automatic pinboarding attachment and centralized bobbin hopper*. Donning, doffing and replenishing of bobbins is automatic.

IT WINDS 5000 LBS. NET OF PERFECT BOBBINS PER 8 HOUR SHIFT



Magazine creel. Cone holder swings back for easy donning and doffing.

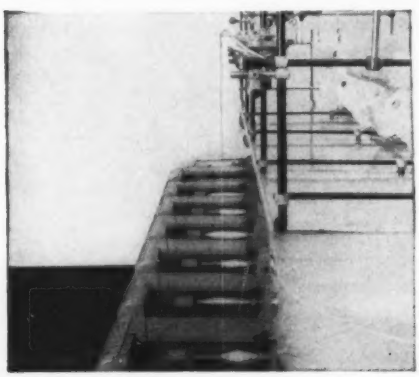


Pinboard of bobbins wound on the Foster-Muschamp Model 66. Note practically perfect build and uniformity.

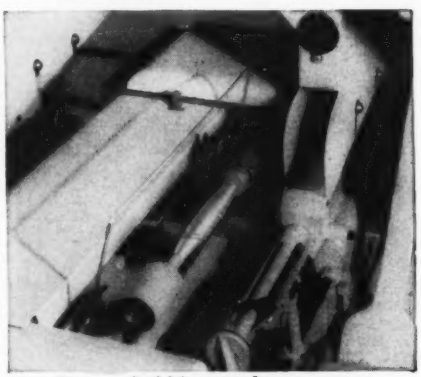
Spindles run at 15,000 R.P.M., but even at this high speed will wind the most delicate filament yarns without damage to fibres.

Learn more about this sensational new automatic bobbin winder. Write for Bulletin M-4.

*Machine also available with single spindle automatic bobbin replenisher and individual bobbin boxes.



Note long, straight line delivery from poteye to thread guide.

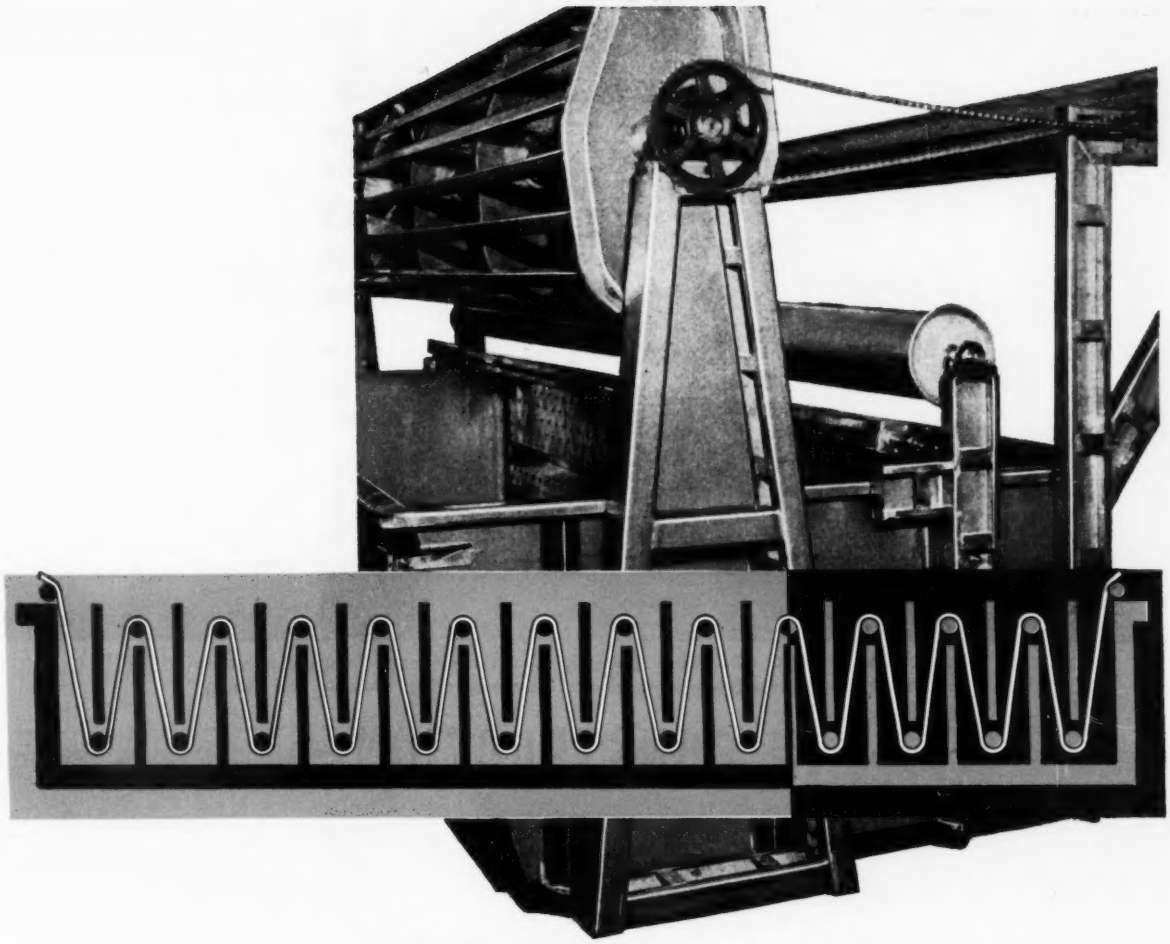


Empty bobbin, ready to move automatically into position. Note close delivery thread guide and feelerless build (feeler build if desired).

FOSTER MACHINE COMPANY

Westfield, Mass., U. S. A.

Southern Office — Johnston Bldg., Charlotte, N. C.



get true colors

...with CRUCIBLE stainless steel

Crucible Rezistal® Stainless steels are the best friends a dyehouse ever had.

That's because stainless steel does not contaminate the dyes it touches. What's more, it's easy to clean Crucible stainless steel—which means less down time . . . lower operating costs.

Of course, the dyehouse is only one phase of the textile industry that makes such economical use of Crucible stainless steel. Finishing . . . fabric preparation . . . yarn preparation . . . weaving . . . knitting . . . yarn manufacture—everywhere you turn, there's a practical, money-saving use for one or more of the Crucible family of stainless steels.

Remember stainless on your next purchase of textile processing equipment. And—for help in deciding how stainless can work best for you—*call Crucible.*

Helpful Book—You'll find helpful hints on the many uses of stainless steels in "Making the Most of Stainless Steels in the Textile Industry". For your free copy, write today.

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CRUCIBLE first name in special purpose steels

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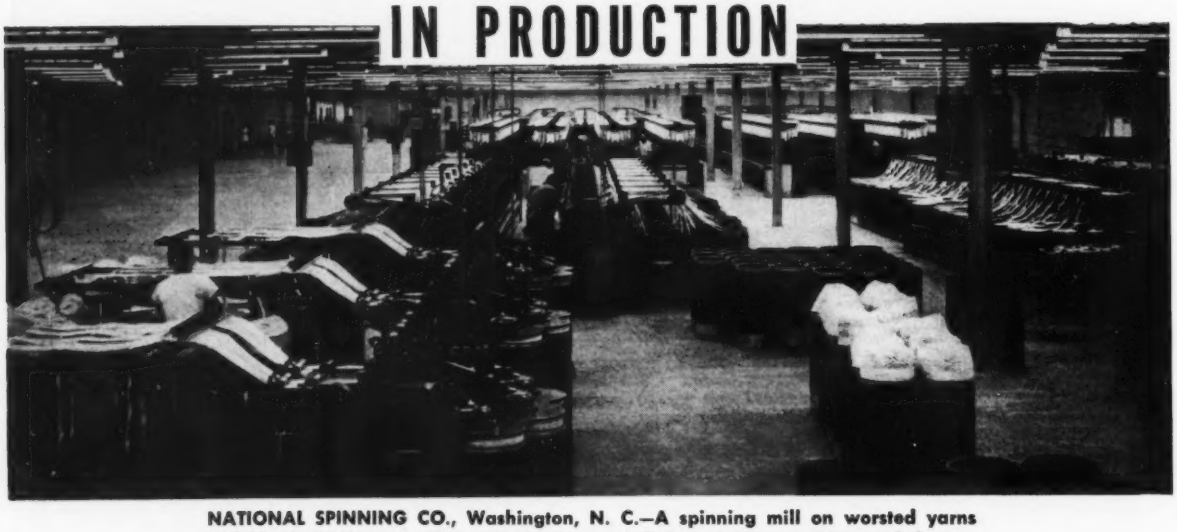
NEW WOOLEN TEXTILE ACTIVITY IN THE SOUTH!

PROJECTS BY LOCKWOOD GREENE

IN PRODUCTION



NATIONAL SPINNING CO., Washington, N. C.—A spinning mill on worsted yarns and blends, laid out for future expansion to include scouring, combing and dyeing.

IN CONSTRUCTION

WELLMAN COMBING CO., Johnsonville, S. C. — Now in construction for very early completion, this 150,000 sq. ft. wool combing plant is arranged for expansion to handle 84,000,000 lbs. of wool per year.

IN DESIGN

New wool combing plant in South Carolina for BRANCH RIVER WOOL COMBING CO. of Woonsocket, R. I.

The Wellman plant is a unit of Nichols & Co., Boston, Mass. The Branch River plant is a unit of Amedee Prouvost of Roubaix, France. These are two of the largest wool processing firms in the world.

LOCKWOOD GREENE ENGINEERS, INC.

BOSTON, MASS.
40 CENTRAL STREET

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Bright new shades for "ORLON"*

with new Du Pont "SEVRON"† dyes

Du Pont Dyes

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING ... *THROUGH CHEMISTRY*

The bright new colors on these sweaters, in both heavy and pastel shades, are finding ready acceptance with color-conscious consumers. From the practical viewpoint, they have the good fastness to light and washing so necessary for knitwear.

The "SEVRON" dyes used for these colors give level dyeings in the entire range of bright shades. They can be readily duplicated from run to run.

These dyes have a direct affinity for all types of "ORLON" acrylic fiber Type 42 yarns and fabrics, and can be applied directly to stock, top, yarn and piece goods. They represent a major advance in dyeing "ORLON," since it is not necessary to use the copper method of dyeing.

Try these new dyes the next time you are dyeing "ORLON"—

"SEVRON" Yellow L	**"SEVRON" Blue B**
"SEVRON" Yellow R	**"SEVRON" Blue 2G**
"SEVRON" Brilliant Red 4G	**"SEVRON" Green B**

We will be glad to work with you on your dyeing problems with any of the new fibers or blends of the new and old. Just write E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

*"ORLON" is Du Pont's trade-mark for its acrylic fiber.
†Trade-mark

L. F. Dommerich & Co., Inc.

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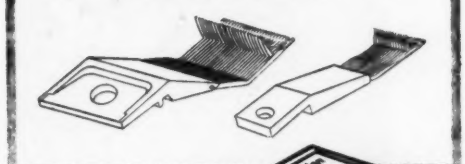
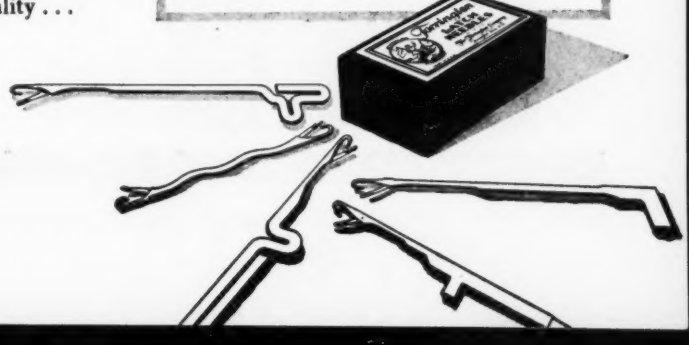
A "name for good knitting" is earned only by exacting attention to detail. That is why mills, famous throughout the world for the quality of their knitting, are consistent users of Torrington Needles.

An added feature of Torrington needles is their scientifically designed package-protection, to safeguard their quality . . . identified by the famous *Red and Green box.*

Give your Raschel and Tricot Machines the benefit of Torrington Quality in expertly mounted leaded units. Call our nearest office for full information.





THE TORRINGTON COMPANY
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...that's when this absolutely LEVEL DYEING "pays off"!

An exclusive method of cushioning the shock of flow reversal . . . plus our own pump design to obtain high flow at moderate pressure . . . reduce danger of "blown" beams.

Quality in denim, chambray, gingham and similar fabrics, depends greatly upon *uniform color*. This can be achieved only with *yarn* of uniform color . . . yarn without the slightest variation in shade. The Smith-Drum Beam and Package Dyeing Machine is designed to *insure absolutely level dyeing* of a complete set of beams or packages.

Level dyeing is possible *only* when all beams or packages in the same lot are dyed simultaneously in the *same bath!* This Smith-Drum Machine dyes from 2 to 6 beams or yarn carriers under identical conditions of liquor ratio, flow, pressure and temperature . . . with uniform distribution of additions to the dye bath.

If you are interested in truly uniform dyeing results, economy in operation and saving in floor space, it will pay you to discuss this machine with one of our representatives.

SMITH, DRUM & COMPANY

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Southern Sales Representatives:

PARROTT & BALLENTINE

610 South Carolina National Bank Building

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NOPCO now offers you a complete line of low-cost, 100% active, liquid DETERGENTS

We can prescribe the right one for you if you'll tell us the things we need to know about your operation . . .

PROCESSING . . .
- Wool? ☐
- Cotton? ☐
- Synthetics? ☐

WANT . . .
- Foaming Action? ☐
- Non-Foaming Action? ☐

USING . . .
- Softened Water? ☐
- Alkaline Builder Solutions? ☐

NEED . . .
- Emulsifier? ☐
- Lime-Soap Dispersant? ☐

Now ready for you, product of Nopco research, is the most comprehensive line of detergents—Nopco Syntergents®—we have ever had. One of them—or more probably a combination of two of them—we believe will do the most effective, most economical job you have ever had done. Nopco Syntergents are formulated to scour out the impurities you want removed—*but will not alter the properties you want to retain.*

There's only one thing: working conditions, methods, and materials vary so widely from one mill to another, that in order to prescribe the Nopco Syntergent which will do the best job for you, we must know your objectives, and the conditions you are working under. We've made it easy for you to tell us—in a Detergent Check List you can fill out in three minutes.

Won't you mail the coupon now, while you think of it, as the first step towards getting the finest detergent operation you have ever known?

MAIL COUPON TODAY

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EVOLVED THRU RESEARCH

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NOPCO CHEMICAL COMPANY
Harrison, N. J.

Yes! Please send us at once our copy of the Detergent Requirements Check List.

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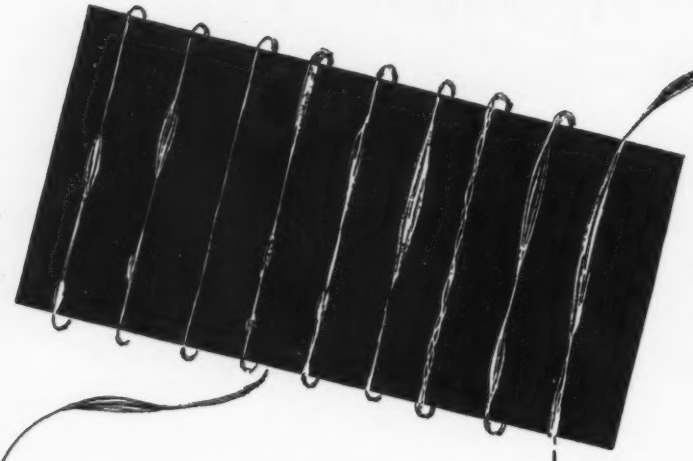
The **BEMBERG®** *Nubbi-Yarn* **STORY**



For the increasingly popular nubby textures for dresses, blouses, draperies, upholstery, and bedspreads, Bemberg presents a wide variety of rayon yarns with nubs, slubs, and thick and thin effects for practically every requirement.

Short Nubbi

High-low, non-mechanical, short entangled slub, irregular in size and spacing. (Also specials running part slub, part smooth). 75 – 800 deniers. As filling with acetate, silk, or chromspun. Lower deniers in dress and blouse fabrics; heavier deniers for draperies, upholstery, bedspreads.

Type "B" Cupione

Longer, entangled slub, irregular in size and spacing, but mechanically controlled for the Douppioni silk-look. 50–450 deniers. Filling for dress and blouse fabrics.

Long Type "A" Slub

Long, parallel, non-entangled slub for the true thick and thin look. 275 – 2500 deniers. Exceptionally soft hand. As filling, in lower deniers, for dress and blouse fabrics; heavier deniers for upholstery, draperies, bedspreads.

Type "C" Long Slub Warp Yarn

Long thick and thin, similar to Type "A", but filaments are more closed, making it suitable for warp or filling. 150 – 450 deniers. Used both warp and filling for dress and blouse fabrics – as warp with any filling, including Bemberg Nubbi yarns – or plied with spun flake yarn for smart men's suitings.

Measle Yarn

Part tight, part loose filaments with different shrinkage . . . forming loop or boucle effect. In weaving, loops break through surface of fabric for decorative dot effect. 400 – 3000 deniers. Lower deniers as filling in dress and blouse fabrics; heavier deniers for upholstery, draperies, bedspreads.

Strata Slub • Multi-Strata Slub • Dream Slub

Torpedo-shaped slubs spaced: Strata, 9′ apart; Multi-Strata, 6′ apart; Dream, 18″ apart. 150 – 5000 deniers. As filling in fabrics for upholstery, draperies, bedspreads.

Flake Slub

Short, entangled slub similar to flake slubs made with staple yarn. 300, 600, 900 deniers. Available for filling in upholstery, drapery, and bedspread fabrics . . . as multi-colored decorative yarn . . . or plied with any of our other yarns.

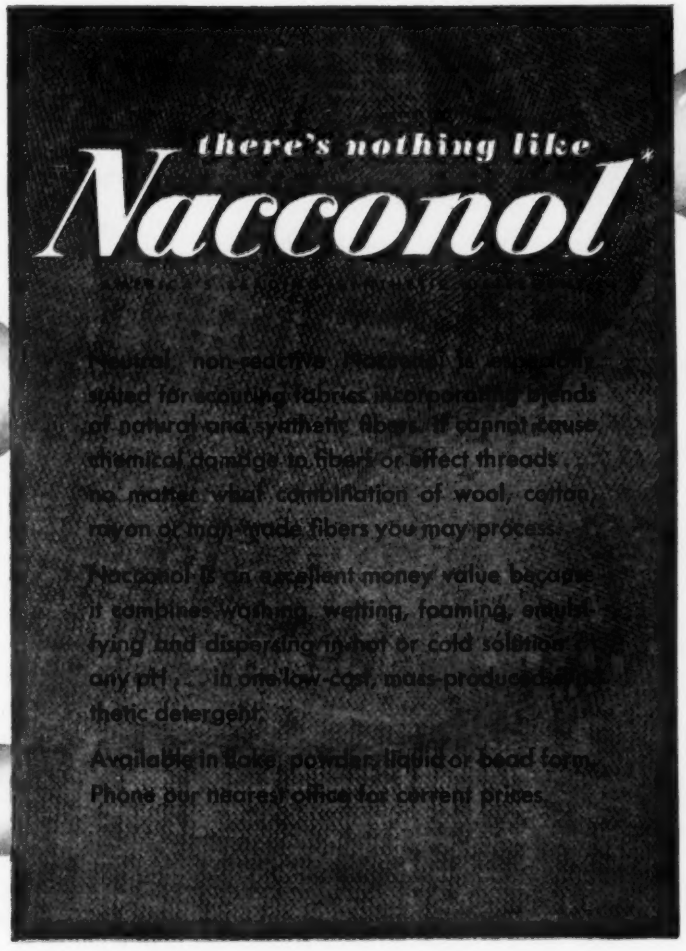
All yarns available natural for piece-dyed fabrics or in 36 direct skein-dyed colors for loom-finished fabrics.

Write for samples and prices. We invite inquiries about special problems or specifications in nubby yarns.

BEMBERG®
Aristocrat® of Rayon Yarn

AMERICAN BEMBERG · Main Office: 261 Fifth Avenue, New York 16, N. Y. · Plant: Elizabethton, Tenn.

for safe, speedy scouring of new fiber blends


there's nothing like
Nacconol*
Neutral, non-reactive Nacconol is especially suited for scouring fabrics incorporating blends of natural and synthetic fibers. It cannot cause chemical damage to fibers or affect threads no matter what combination of wool, cotton, rayon or man-made fibers you may process.
Nacconol is an excellent money value because it combines washing, wetting, foaming, emulsifying and dispersing in hot or cold solution at any pH . . . in one low-cost, mass-produced synthetic detergent.
Available in flake, powder, liquid or bead form. Phone our nearest office for current prices.

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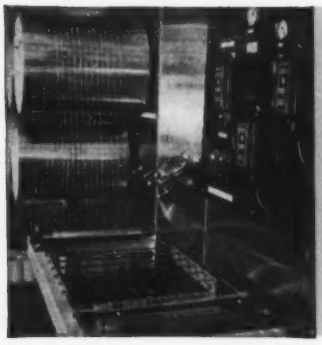
Research and experience... yours for the asking with

Monsanto's 3-point service in warp sizing

1. *Monsanto's comprehensive line of warp sizes* includes Stymer* LF for loom-finished acetates, such as this taffeta which won't water-spot; Stymer R for newest synthetic fibers; and Stymer S for rayon and synthetics.



2. *Unique development and evaluation facilities,* such as this Monsanto-planned slasher, reproduce modern mill conditions in the laboratory. They permit testing of synthetic resins as warp sizes under realistic circumstances.

3. *Monsanto's experienced personnel,* both in the laboratory and in the field, bring years of practical experience to your problems. They have pioneered many basic developments in the textile industry.

You're invited to take full advantage of Monsanto's 3-Point Service, combining the latest in warp size technology with years of field experience.

Monsanto's Service is based on a comprehensive line of warp sizes, developed and tested under mill conditions by the use of such unique equipment as the slasher shown here. It includes the advice of trained Monsanto personnel, both in the field and in the laboratory.

For complete information on Monsanto's line of warp sizes ... and the help of our experienced technical and sales people ... just call, wire or write
MONSANTO CHEMICAL COMPANY
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*Stymer: Reg. U. S. Pat. Off.

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SERVING INDUSTRY... WHICH SERVES MANKIND

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NEW
TERMACO CONVEYOR SYSTEM
CUSTOM BUILT
from
ECONOMICAL STANDARD PARTS

Conveys Bobbins
WHERE **you want them**
WHEN **you want them**

Eliminates costly manual handling, congestion and delays

SEE complete working model and actual short conveyor sections *IN OPERATION*

Terrell engineers have recently developed conveyors of a new design which can be economically adapted to individual bobbin handling requirements. Conveyors can be furnished in any lengths, to deliver bobbins to any desired locations, winder hoppers, storage bins, and from floor to floor.

Let a Terrell engineer explain the advantages and economy of a TERMACO conveyor system.

THE **Terrell** MACHINE COMPANY, INC.
CHARLOTTE, N. C.

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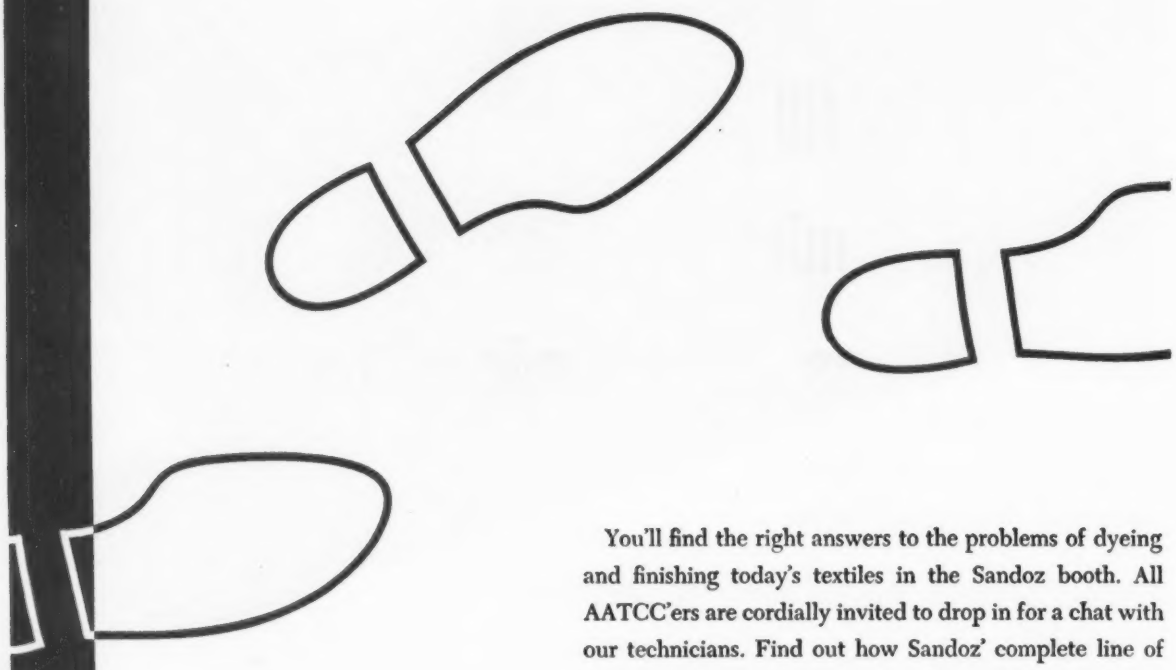
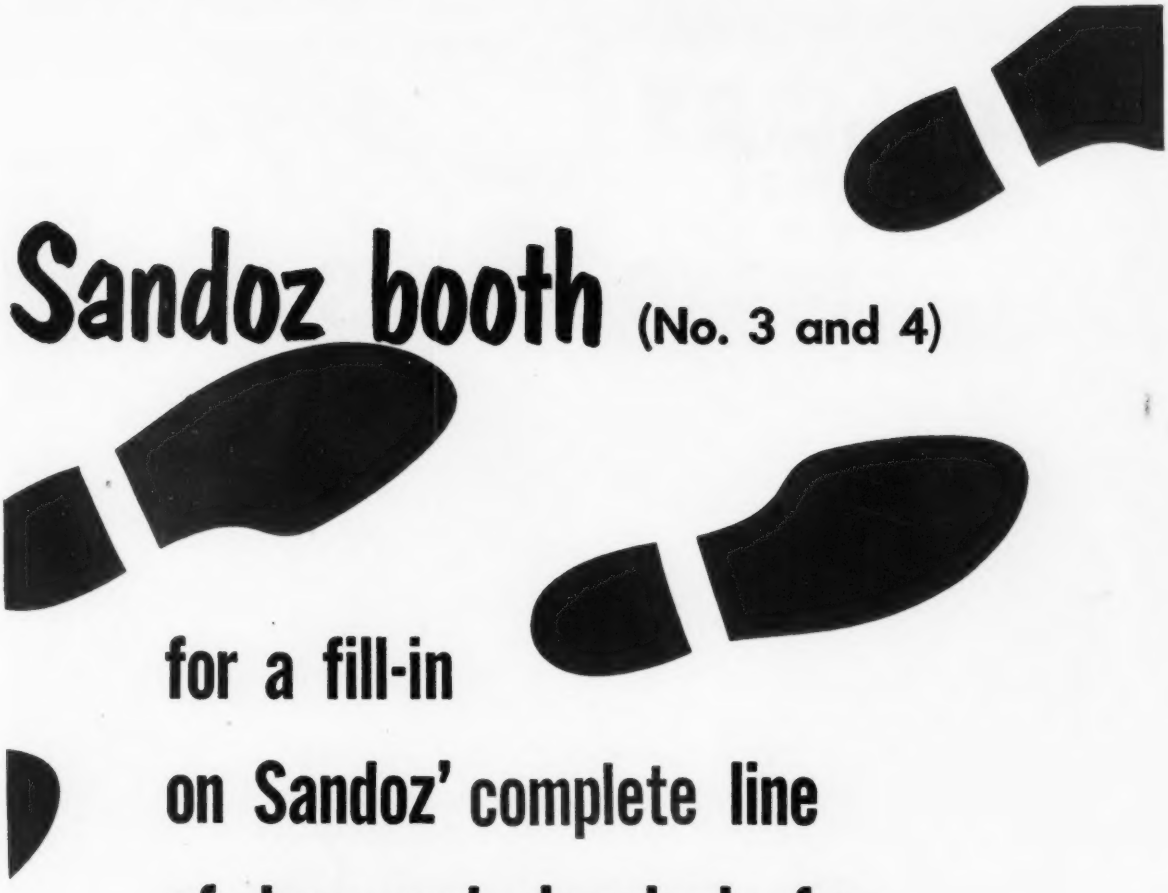
AATCC'ers:

Make tracks to the



You'll find the right answers to the problems of dyeing and finishing today's textiles in the Sandoz booth. All AATCC'ers are cordially invited to drop in for a chat with our technicians. Find out how Sandoz' complete line of dyestuffs and chemicals plus specialized laboratory facilities and scientific "know-how" can help you solve wet-processing problems.

There's a Sandoz office near you: Hudson, Mass; Fairlawn, N.J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal; Toronto. Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N.Y. 4.4



Sandoz booth (No. 3 and 4)

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on Sandoz' complete line

of dyes and chemicals for . . .

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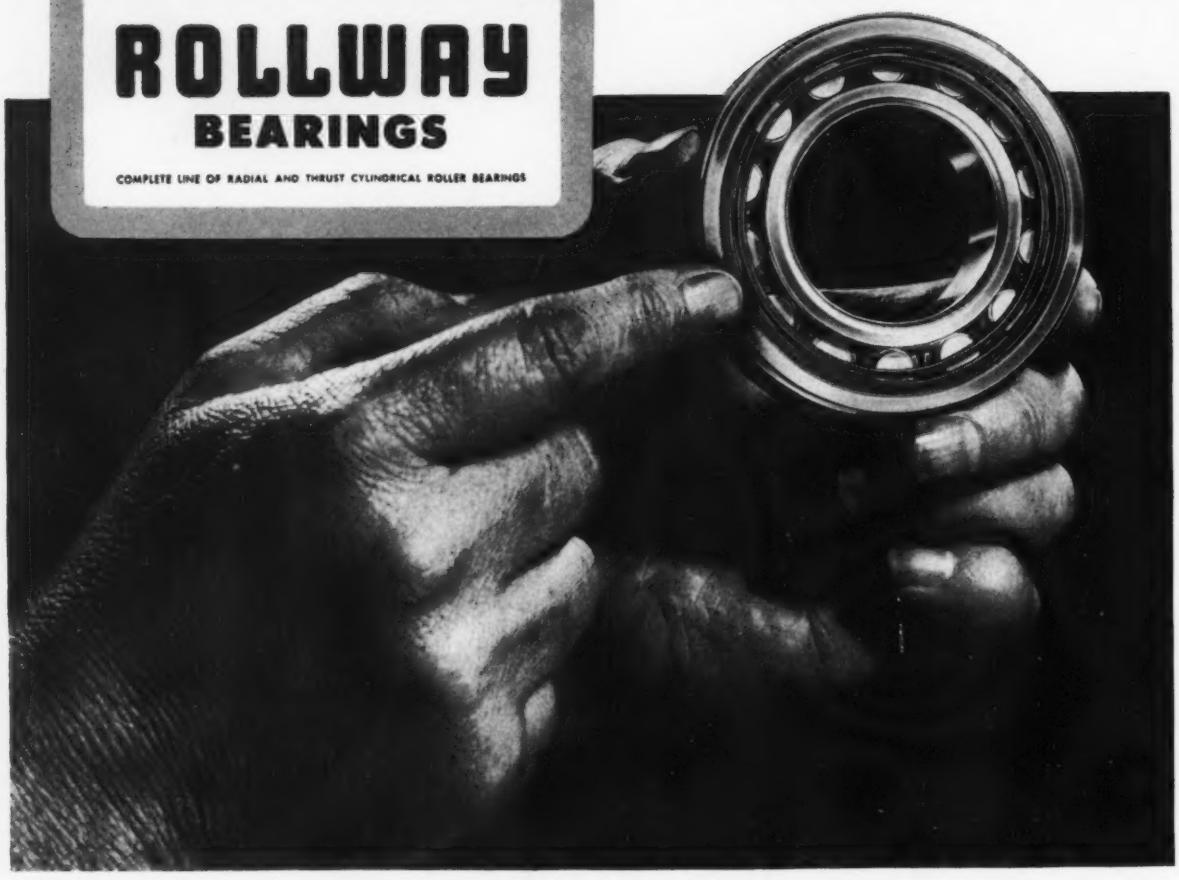
BEARINGS

COMPLETE LINE OF RADIAL AND THRUST CYLINDRICAL ROLLER BEARINGS



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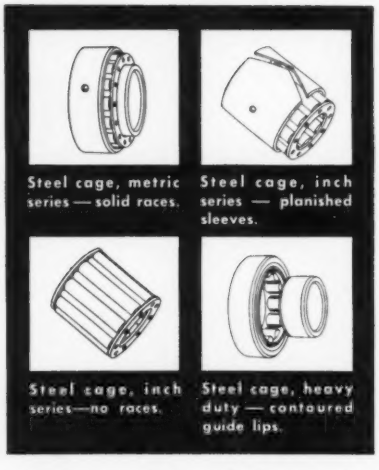
Spindles, lickers in, card cylinders, feed rolls, cylinder shafts, all work better on anti-friction bearings, and all require a bearing specifically adapted to the space, speed, load, over-load, torque, temperature, lint and many other factors.

That's why Rollway *Solid Cylindrical* Roller Bearings with their wide range of standard types and sizes in steel-cage, inch and metric series, afford the best balance of low power consumption, uniform rotation and tension on yarns and fabrics, and longer continuous operation without servicing or replacement.

Let Our Engineers Work for You

Forty-five years of design, operating and manufacturing experience are at your service for the asking. No charge. No obligation. Every detail held in strict confidence. Just send us details of load, speed and operating requirements. Or ask for one of our engineering representatives to call. Rollway Bearing Co. Inc., Syracuse, N.Y.


Steel cage, metric series — solid races.
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Steel cage, inch series—no races.
Steel cage, heavy duty — contoured guide lips.

● Wide range of standard type and sizes in steel cage, inch and metric series.

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This Van Vlaanderen

COMBINATION EXAMINING

and TUBING MACHINE

is built to the superior standards identifying all Van Vlaanderen machines It is rugged It is designed for the operator's convenience. It gives better production. It eliminates tubing labor costs.

Your operator can do straight examining—tube to tube, shell to shell, beam to beam or can tube while he inspects all or only part of the fabric. Speed changes from the slowest examining rate to full tubing speed are effortlessly and instantaneously made through a finger-tip control, governing a variable speed drive.

For rejected yardage (seconds) a supplementary center bar is provided.

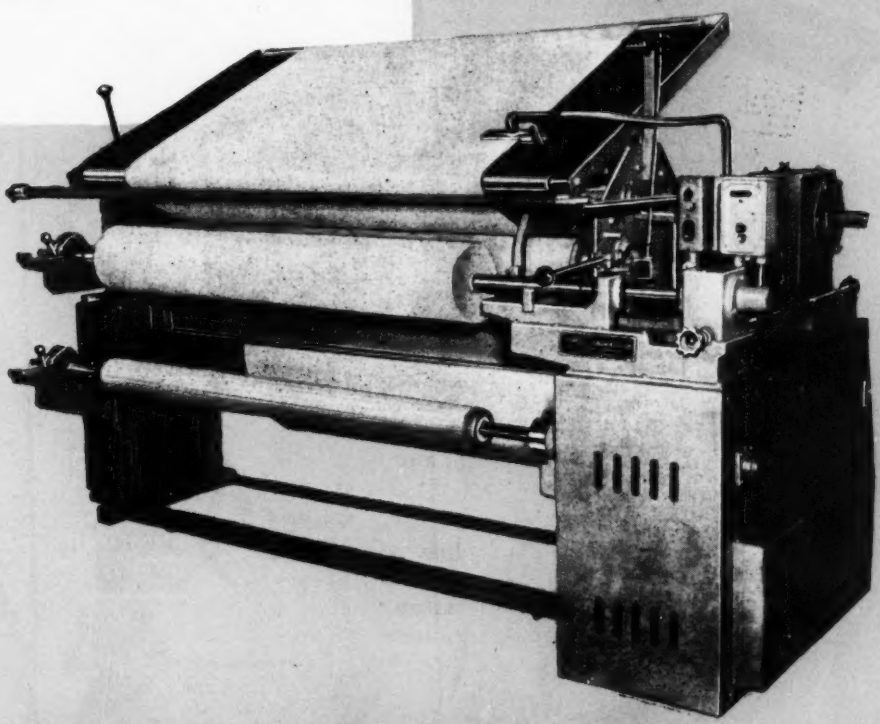
YOU FIGURE THE SAVING

Can you eliminate the labor costs of tubing fabrics by using this modern combination machine?

The Van Vlaanderen Combination Examining and Tubing Machine was designed to permit you to do just that

This machine automatically tubes while your operator examines—and tubes better because selvage corrections are made quicker and smoother by the automatic selvage guide consisting of an air pressure follow-up control and hydraulic cylinder actuating the movable tubing bar carriage. Operates on all fabrics from light sheers to heavy ducks, plastics and paper.

Ask our representative to work with you to decide the savings you can make



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these fine stores are promoting

AVCOSET* fabrics

–and promoting business!

What you see here is only a hint of the beehive of store promotional activity being stirred up across the country in behalf of AVCOSET rayon fabrics.

What you *can't* see here – the rest of the picture – is the day-to-day sales action that these AVCOSET promotions are stimulating across the counters across the country. Action that could be happily duplicated at your store.

What do AVCOSET rayons have that excites cautious, hard-boiled retailers? From the day it was introduced AVCOSET rayons have made news . . . news that translates into convincing consumer selling points. And *that* translates into profitable volume.

Of all rayons, only AVCOSET fabric provide you with this degree of promotional strength: *Permanent, unconditional washability through tub, washing machine or commercial laundry – never losing size or color-appeal!*

This is the sell-worthy story you can tell your customers – as we are doing consistently and forcefully – via AVCOSET retail advertising and national advertising. Tie in with AVCOSET. Tie down important business!

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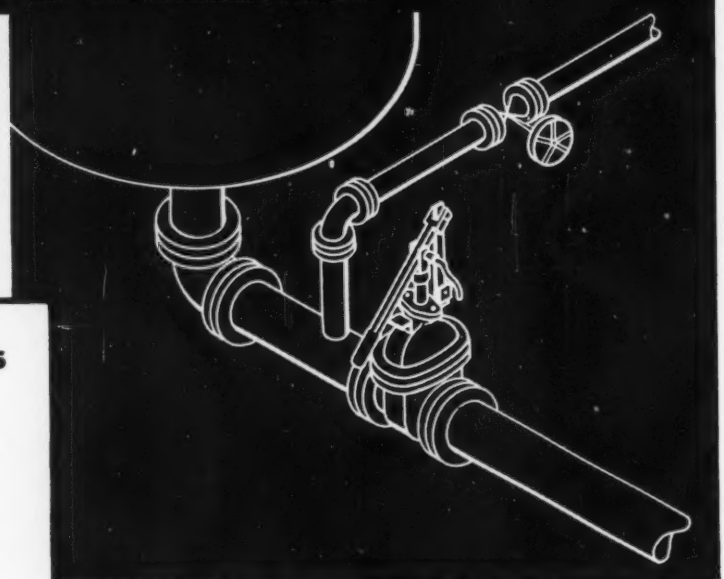
*Registered Trade Mark of American Viscose Corp. for fabrics and Cellulose Ethers

No Repair Cost in 27 Years

Quality Valve installed 1927 still saving on water softener maintenance



The Installation

At Phoenix Manufacturing Company, Joliet, Illinois, steel and rubber products plant. Original installation of 6-inch Crane quick-opening iron gate valve on flush-out line from water treating tank in soda ash-lime softener system.

Valve Service Ratings

SUITABILITY: Never failed

FEATURES: Rugged, easy-to-service design

MAINTENANCE COST: Zero

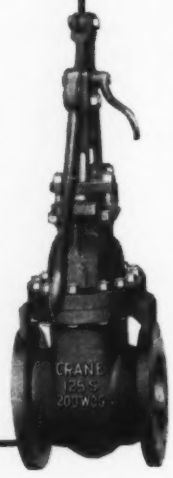
SERVICE LIFE: 27 years—still on job

OPERATING RESULTS: Lower cost water treating

AVAILABILITY: Crane catalog item—Current No. 471

The Valve

Further improved inside and out in many ways since 1927, modern Crane Iron Body Gate Valves keep making these performance records. Quick-opening design No. 471 shown, is but one member of this big, complete in size and pattern family. Includes OS&Y and inside screw valves; all iron and brass trim; screwed, flanged, and hub ends. Whatever your need, Crane lists it in your No. 53 catalog—or ask your Crane Representative.



The Case History

With each operation—2 or 3 times daily—more than 27 years—this Crane valve has demonstrated the thrift of a quality-buying policy.

Not once has it failed to open wide quickly, smoothly, and again to seat tightly in this customarily rough-on-valves service.

Not once has this valve undergone any repairs or maintenance. The only attention was periodic routine servicing with occasional clean-up. Still the customer reports: "good and satisfactory service."

Today, more than ever, quality buying is your best guard against high maintenance cost. And today, as always, better quality in valves means Crane valves.

THE BETTER QUALITY . . . BIGGER VALUE LINE . . . IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

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Electronic spacer patterns guide stockpile through sequence of cuts automatically. Responsive Oilgear Transmission provides speedy travel with pin-point stopping within 3/1000ths of an inch from zero tolerance. Lawson Cutter also used in repetitive single cuts and for trim on sides. Photo in plant of Liedtke Brothers, Chicago.

The RESULT?

Accuracy just 900% better

Production increase 50 to 500%

Over and over and over again, Oilgear Fluid Power proves to be the right solution to a drive problem. Take the case of the Lawson Cutter.

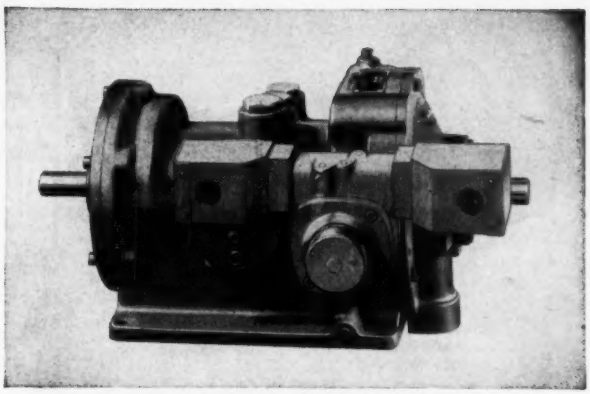
If precision is emphasized anywhere, that "where" is the field of fine color printing of every description. Money, time, effort are spent that art be right, that plates be right, that printing be right—to a hairline. And then comes the cutting operation where all that has gone before is saved—or wasted. Small wonder that cutting remained a hand operation for many years.

But the E. P. Lawson Company, manufacturer of cutting machines, wanted to modernize and mechanize the operation. Its designers turned to an electronic spacer device. This if anything would give precision in marking *where* to cut. But the next problem was to find a power drive capable of *obeying* the orders the electronic signal system was capable of *giving*. Lawson tried one type of drive. It varied all over the map. Lawson tried another type of drive. It was fairly accurate —but did not hold up.

Finally, as so many machine designers have done, Lawson turned to Oilgear. And there, as so many machine designers have done, Lawson found the answer to its problem.

The answer? Undeviating accuracy within 3/1000ths of an inch from zero tolerance—just 900% better than what had been achieved in the past; speed, translating into production increases of 50% to 500% month in and month out. How? Through the absolute responsiveness of Oilgear Fluid Power Drive to the automatic control system. Immediate, shockless acceleration to full speed "forward". Precise measured slowdown as the feed fence nears the target. Precision stopping "on target" for the cut and then rapid acceleration toward the next cut.

Here again is an example of the superlative "right-



Oilgear Two way Variable Speed Transmission as used on Lawson Electronic Spacer Cutters. These drives also provide unlimited speed range from zero to maximum. Speed changes made in split second or specified time.

ness" of Oilgear Fluid Power "generators," motors, transmissions—for almost any type of installation or machine requirement, big, little, and all those in between.

Chances are Oilgear is *the* solution you've been looking for. And Oilgear engineers will be just as quick to tell you if Oilgear is *not* for you. Ask for further information from an Oilgear Engineering Representative. No charge. No obligation. THE OILGEAR COMPANY, 1577 W. Pierce St., Milwaukee 4, Wisconsin.

OILGEAR

OILGEAR

THESE EXCLUSIVE PRECISION-MACHINED GUIDES

eliminate chatter

lengthen service life

IN LUNKENHEIMER

IRON BODY GATE VALVES

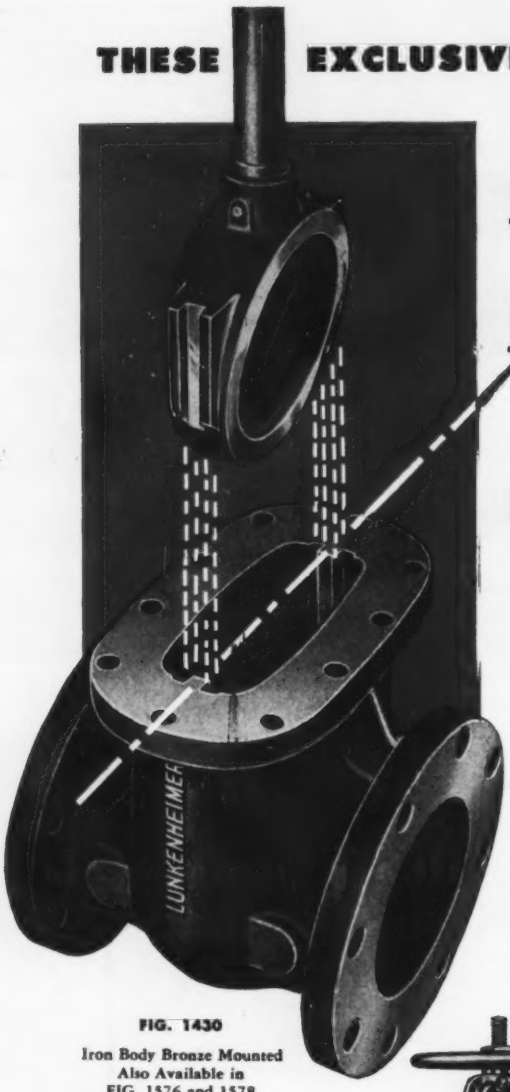
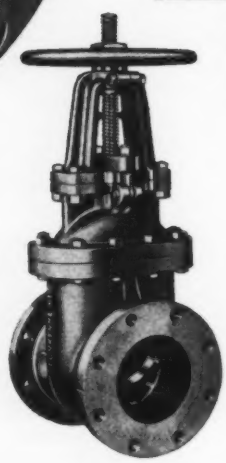


FIG. 1430

Iron Body Bronze Mounted
Also Available in
FIG. 1576 and 1578
All Iron
Screwed and Flanged Types

This exclusive machined-guide design is only one of the many original money-saving features of Lunkenheimer Iron Body Gate Valves. Gate valve chatter — the sound of wasteful, accelerated wear—is eliminated by Lunkenheimer's unique method of manufacture. Not only are the guide channels in the disc accurately machined, but the guides in the body, as well. These precision-machined guides hold the disc firmly in line as the valve is opened and closed — prevent pressure from forcing the disc against the opposite seat. Result: no clatter, no chatter, and much longer valve life. When repair is necessary, replacement parts can be easily installed without machining or fitting — an exclusive Lunkenheimer feature. In addition, Lunkenheimer Iron Body Gate Valves have long-wearing Stemalloy® Stems, bronze bushings that protect the stem from corrosion and scoring, and handy swing bolts and shelves that make repacking so easy. No other iron-body valve gives you so much *outstanding* value.



WRITE FOR Circular 564, describing the complete Lunkenheimer Iron Body Gate Valve line. Address: The Lunkenheimer Co., Box 360C, Cincinnati 14, Ohio, or phone your Lunkenheimer Distributor.

LUNKENHEIMER
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QUALITY

IRON • STEEL • BRONZE

LUNKENHEIMER®

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L-253-9A

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SERVICE The most comprehensive product line of the industry to supply all dye-consuming trades.

SERVICE Salesmen trained in practical problems available in every trade center to integrate use of GDC and ANTARA products with your processes and materials.

SERVICE Technical assistance by experts in all fields.

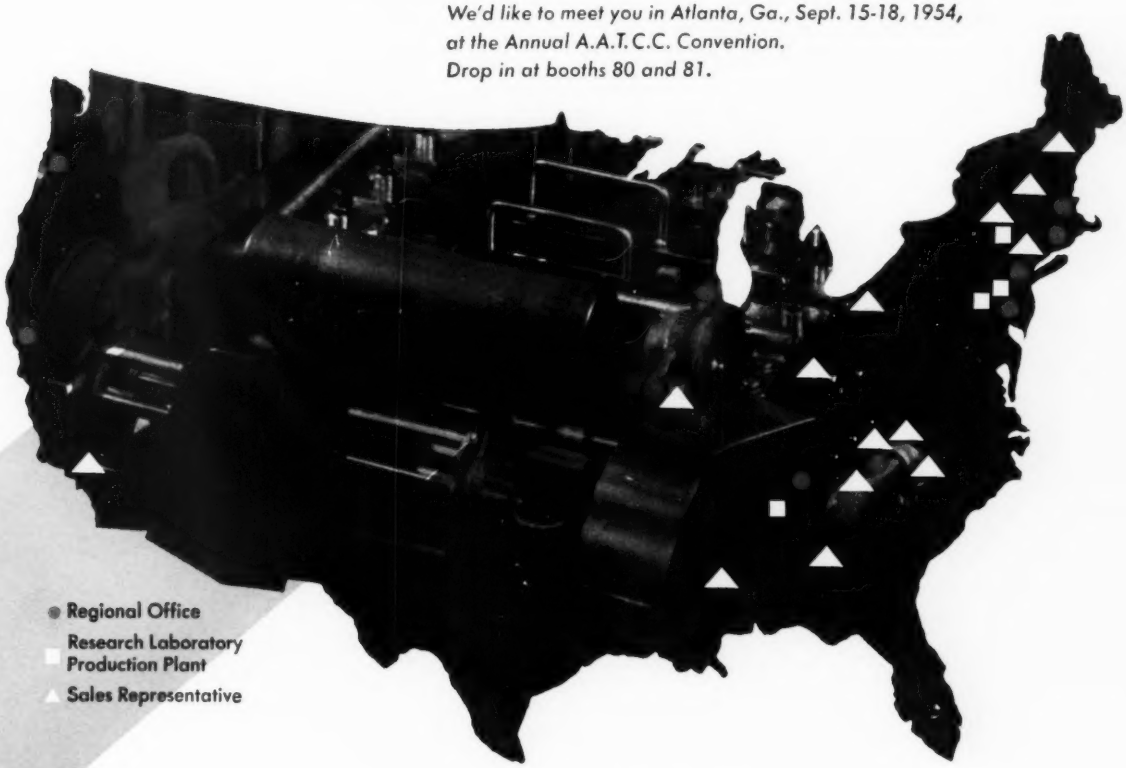
SERVICE Adequate stocks with nationwide distribution.

SERVICE Prompt deliveries. Competent and courteous attention to orders and inquiries.

SERVICE Pattern cards, data sheets and technical literature on thousands of items and subjects.

SERVICE Prices and values the best obtainable.

We'd like to meet you in Atlanta, Ga., Sept. 15-18, 1954, at the Annual A.A.T.C.C. Convention. Drop in at booths 80 and 81.



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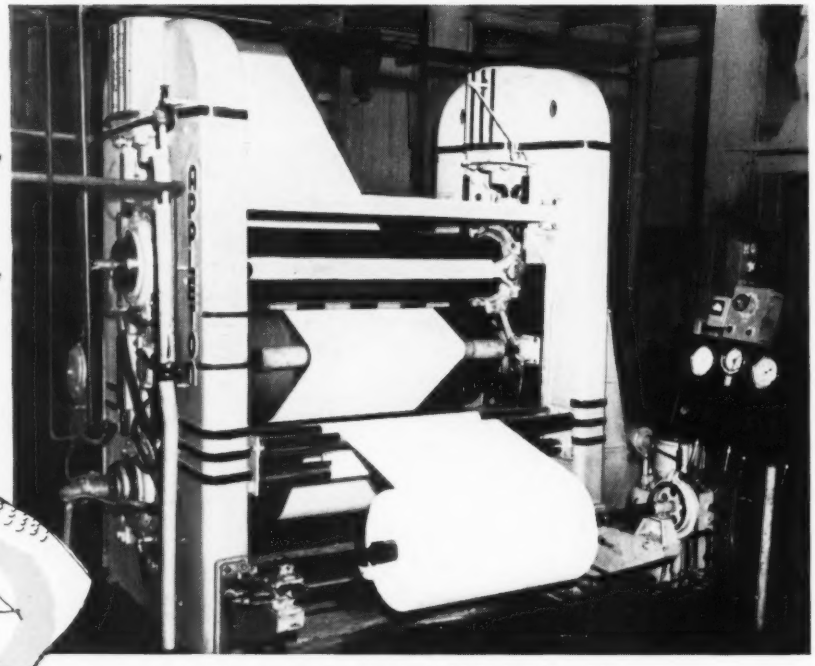
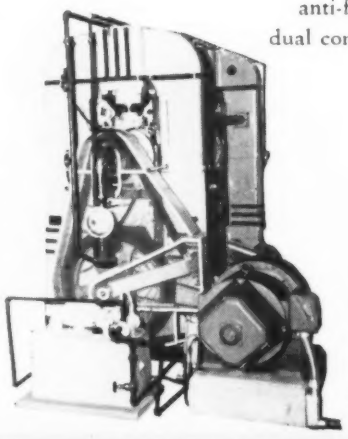


Here is an 80 Ton Appleton 3 Roll Calender in operation

...in Any weight division

The Appleton 3 Roll Hydraulic Friction Calender —available in 40 to 120 Ton models—takes difficult jobs in easy stride, performs dependably day after day, combines speed with consistent quality. Illustrated is the 80 Ton model. Its specialty— Everglaze Glazed finishes.

Long life features include all rolls mounted in anti-friction bearings with force feed oil lubrication . . . dual control pressure system . . . cooling cylinder . . . 40 h.p. Reliance V.S. drive.



A good decision:

call our representative today and see how modern Appleton equipment can help cut your costs. There is no obligation.

APPLETON MACHINE COMPANY

APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

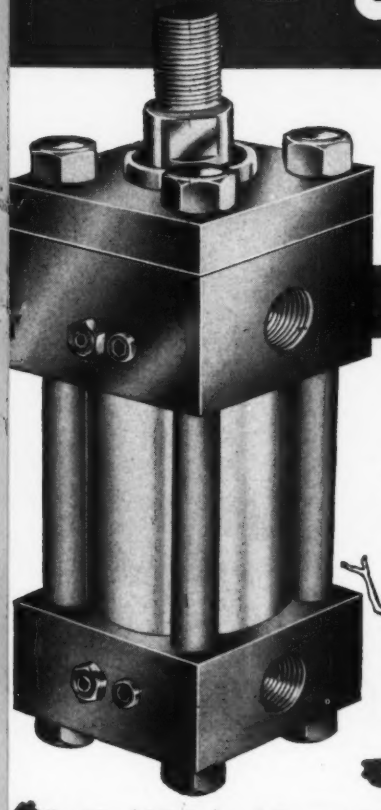
Augmenting Miller's Quality-Famous Line of "Custom-Built" Cylinders...

Miller

Stock AIR AND HYDRAULIC CYLINDERS

Available for *Immediate Delivery*...

in the popular sizes, mountings and prices listed below



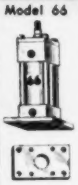
Any of the *Interchangeable* "Stock" Mountings illustrated are attached by our factory to the "in-stock" Basic Model 53 with the tie rod nuts in a few moments. This gives you a selection of over 500 different "Stock" Cylinders for *immediate use*—and permits easy conversion to other models for *future re-use*. Thus, you save delivery and production time, investment cost and storage space.

ORDER DIRECTLY FROM THIS LIST . . .

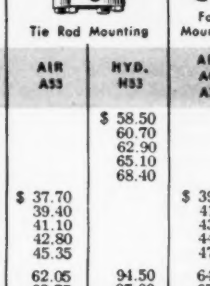
Shipment can be generally made within 24 hours after we receive your order. Prices are F. O. B. our plant.

PRICES OF MILLER "STOCK" CYLINDERS WITH MOUNTINGS ATTACHED AS ILLUSTRATED

(Prices on the separate mounting attachments for future re-use are available on request)



			Basic Model 53		Model 77	Model 61	Model 62	Model 65	Model 66	Model 86
				Tie Rod Mounting	Foot Mounting	Rod End Flange	Cap End Flange	Rod End Flange	Cap End Flange	Pivot Mounting
Bore	Stroke	Cushion	AIR A53	HYD. H53	AIR A61 A77	HYD. H61 H77	AIR A62	HYD. H62 H65	AIR A66	HYD. H66 H86
1½"	2"	Non		$ 58.50		$ 61.40		$ 66.70		$ 72.85
1½"	4"	Non		60.70		63.60		68.90		75.05
1½"	6"	Non		62.90		65.80		71.10		77.25
1½"	8"	Non		65.10		68.00		73.30		79.45
1½"	11"	Non		68.40		71.30		76.60		82.75
2"	2"	Non	$ 37.70		$ 39.75		$ 42.30		$ 44.60	
2"	4"	Non	39.40		41.45		44.00		46.30	
2"	6"	Non	41.10		43.15		45.70		48.00	
2"	8"	Non	42.80		44.85		47.40		49.70	
2"	11"	Non	45.35		47.40		49.95		52.25	
2"	3"	Both	62.05	94.50	64.10	97.45	66.65	103.05	68.95	111.55
2"	5"	Both	63.75	97.00	65.80	99.95	68.35	105.55	70.65	114.05
2"	7"	Both	65.45	99.50	67.50	102.45	70.05	108.05	72.35	116.55
2"	9"	Both	67.15	102.00	69.20	104.95	71.75	110.55	74.05	119.05
2"	13"	Both	70.55	107.00	72.60	109.95	75.15	115.55	77.45	124.05
2½"	2"	Non	41.45	73.30	43.70	76.25	46.25	82.30	49.00	93.10
2½"	4"	Non	43.35	76.00	45.60	78.95	48.15	85.00	50.90	95.80
2½"	6"	Non	45.25	78.70	47.50	81.65	50.05	87.70	52.80	98.50
2½"	8"	Non	47.15	81.40	49.40	84.35	51.95	90.40	54.70	101.20
2½"	11"	Non	50.00	85.45	52.25	88.40	54.80	94.45	57.55	105.25
3¼"	3"	Both	77.80	126.85	80.35	131.20	84.15	138.60	87.70	149.95
3¼"	5"	Both	79.80	129.85	82.35	134.20	86.15	141.60	89.70	152.95
3¼"	7"	Both	81.80	132.85	84.35	137.20	88.15	144.60	91.70	155.95
3¼"	9"	Both	83.80	135.85	86.35	140.20	90.15	147.60	93.70	158 95
3¼"	13"	Both	87.80	141.85	90.35	146.20	94.15	153.60	97.70	164.95
4"	2"	Non	56.25	106.00	59.10	111.15	62.95	118.90	67.30	132.80
4"	4"	Non	58.85	109.40	61.70	114.55	65.55	122.30	69.90	136.20
4"	6"	Non	61.45	112.80	64.30	117.95	68.15	125.70	72.50	139.60
4"	8"	Non	64.05	116.20	66.90	121.35	70.75	129.10	75.10	143.00
4"	11"	Non	67.95	121.30	70.80	126.45	74.65	134.20	79.00	148.10
5"	3"	Both	98.25		101.40		105.25		110.60	
5"	5"	Both	101.65		104.80		108.65		114.00	
5"	7"	Both	105.05		108.20		112.05		117.40	
5"	9"	Both	108.45		111.60		115.45		120.80	
5"	13"	Both	115.25		118.40		122.25		127.60	
6"	2"	Non	80.60		83.95		87.85		94.15	
6"	4"	Non	84.90		88.25		92.15		98.45	
6"	6"	Nen	89.20		92.55		96.45		102.75	
6"	8"	Non	93.50		96.85		100.75		107.05	
6"	11"	Non	99.95		103.30		107.20		113.50	
8"	3"	Both	157.35		161.05		167.90		174.95	
8"	5"	Both	162.45		166.15		173.00		180.05	
8"	7"	Both	167.55		171.25		178.10		185.15	
8"	9"	Both	172.65		176.35		183.20		190.25	
8"	13"	Both	182.85		186.55		193.40		200.45	



iller "Stock" Cylinders fully meet the J.I.C. Standards and are identical to Miller "Custom-Built" Cylinders in design and construction.

"Stock" Air Cylinders are for 200 psi operation, "stock" hydraulic cylinders for 2000-3000 psi operation. Piston Rods of "Stock" Cylinders are "Style No. 2 Standard."

For complete descriptive and dimensional data on both "Stock" and "Custom-Built" Miller Cylinders, write for Bulletins A-105 and H-104 sent FREE on request.

Sales and Service From Coast to Coast!

Consult your local directory or write us direct for the name of our representative for your area

"Stock" Boosters, Too! Immediate delivery on Miller Dual Pressure Boosters; 5" bore, 1" ram (80 psi air input produces 2000 psi hydraulic output for driving one or more work cylinders simultaneously). In 6" and 12" strokes. Write for data and prices.

Complete Miller "custom-built" line includes: air cylinders, 1½" to 20" bores, 200 psi operation; low pressure hydraulic cylinders, 1½" to 6" bores for 500 psi operation, 8" to 14" bores for 250 psi operation; high pressure hydraulic cylinders, 1½" to 12" bores, 2000-3000 psi operation. All mounting styles available. Also, a complete line of Fluid Pressure Boosters and Accumulators.

Miller

MILLER FLUID POWER CO.

(Formerly MILLER MOTOR COMPANY)

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AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

Rayon...Acetate...Nylon...Orlon...Dacron

HONEYWELL now extends the scope of the *Moist-O-Graph* principle . . . making a single instrument capable of measuring percent moisture in *any* warp, simply by turning a switch.

used by leading mills

For mills which process varied types of fibres using different sizing materials, this advancement means that the full advantages of complete slasher control are always realized. The method has been thoroughly tested in both laboratory and mill. It is working today on acetate, viscose and nylon yarn, spun yarn, and worsted and rayon blend—sized with gelatin, starch, Stymer or Orthocryl. Among the leading mills which use *Moist-O-Graph* are:

Pansy Weaving Company — Textron
Stehli and Company — Beaunit Mills
Green Halgh Mills — Canadian Celanese
Chicopee Manufacturing Company

reads regain directly

Today's *Moist-O-Graph* incorporates features which Honeywell has developed following more than 15 years of pioneering experience in this field. Notable among these features are the instrument's direct reading scale and chart . . . the slasher operator doesn't have to interpret, consult tables. He sees on the instrument an indicated and recorded measurement that immediately tells him actual percent regain. And this calibration is made *at the factory* . . . does not require field adjustment. The measuring instrument is an *ElectroniK* recorder, famous throughout industry for accuracy and dependability.

multiple range

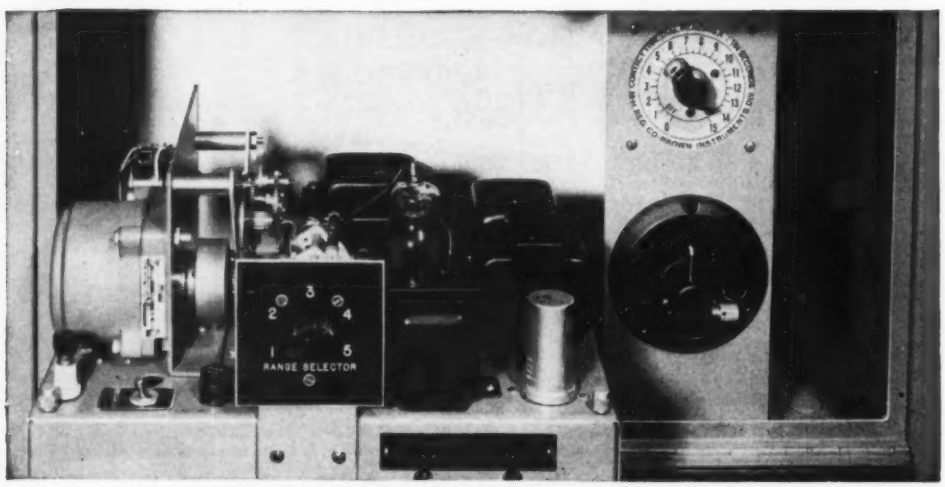
When there's a change in the fibre fed to the slasher, or in the size used, all the operator has to do is turn a selector switch to the proper range. The calibration then applies to the new operating conditions. The only other adjustment that the operator has to make is to set the index at the desired regain.

part of complete slasher system

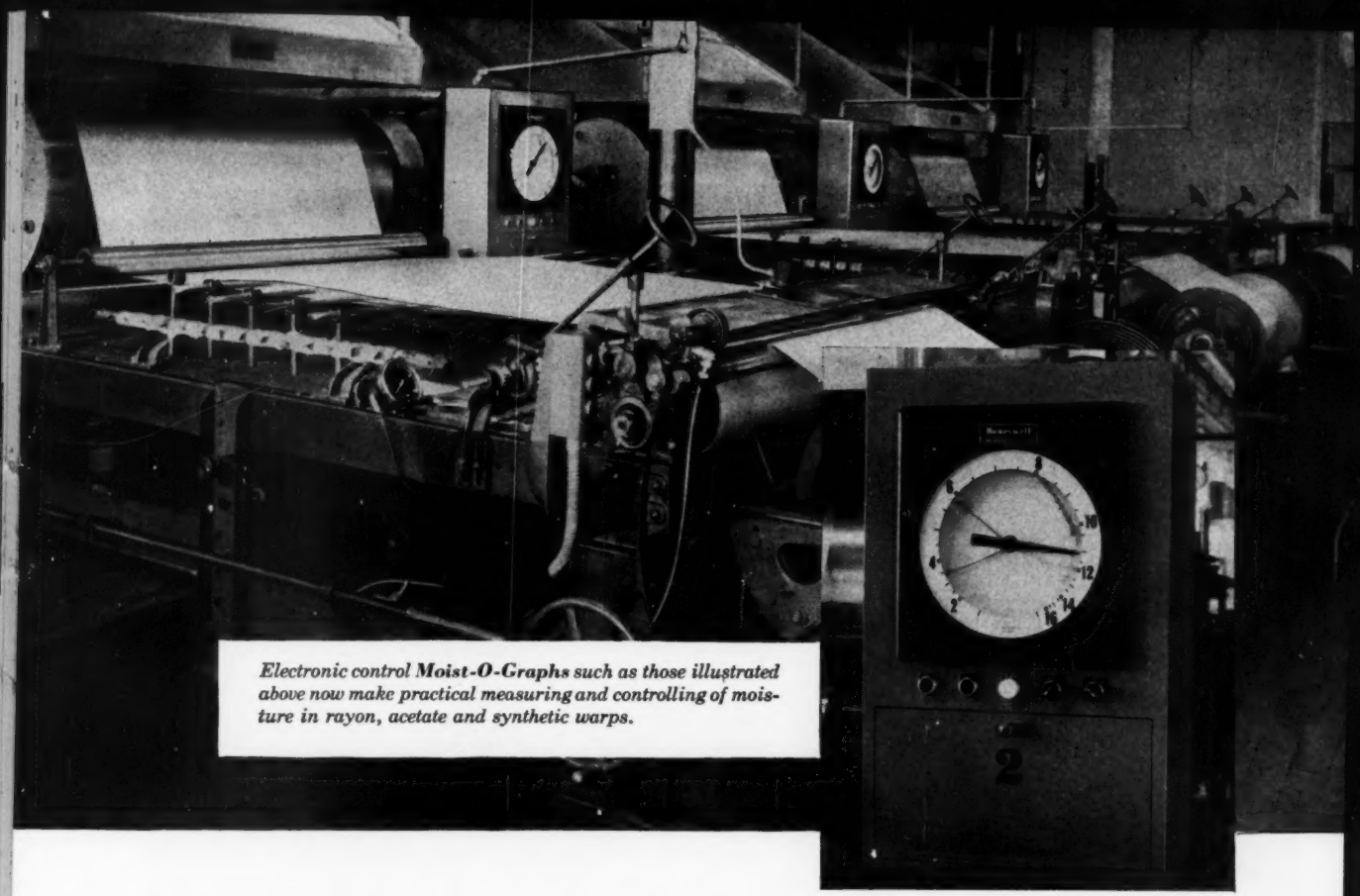
For automatic control of regain, the *Moist-O-Graph* regulates slasher speed to maintain the correct drying rate. The result is that the slasher operates at the maximum speed possible for a given warp. This control is integrated with other Honeywell instruments, which are combined into complete systems for efficient, centralized regulation of the entire slashing process.

Moist-O-Graph®—

of rayon,



A turn of this switch changes the ***Moist-O-Graph*** *calibration to read percent regain directly, for any fibre, blend and/or size.*



Electronic control ***Moist-O-Graphs*** *such as those illustrated above now make practical measuring and controlling of moisture in rayon, acetate and synthetic warps.*

for controlled regain acetate and synthetic yarns

REGARDLESS of the fibre you're processing, you can measure and control warp moisture directly by means of the versatile, electronic multi-range *Moist-O-Graph*.

In leading mills, such as those listed on the opposite page, this instrument is making possible better weaving through more uniform warp, by controlling at uniform moisture . . . providing correct moisture . . . preventing wet warp . . . eliminating overdrying . . . and assuring uniform stretch.

Added to this benefit of better weaving is the attendant increase in slasher room production, made possible by the fact that the *Moist-O-Graph:*

- *prevents overdrying of yarn, resulting in fewer stoppages*
- *makes possible higher running speed*
- *provides operation records*

Our local Honeywell engineering representative will be glad to give you full details on how this instrument can help improve slasher efficiency in your mill. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa. Sales and service offices in more than 110 principal cities of the United States.

● **REFERENCE DATA: Write for new Bulletin No. 54-66.**

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

TAPER-LOCK

A PATENTED PRODUCT OF DODGE

-OFF THE SHELF

NO REBORING!
NO KEYSEATING!
NO MACHINING!

Ready for the shaft, with no costly, time-consuming operations to make them fit. That's the big news about Dodge Taper-Lock Sprockets. Taper-Lock grips the shaft with the firmness of a shrunk-on fit, yet comes off easily. Bushings may be re-used. They come in sizes to meet most every application.

Taper-Lock Sprockets are available from Distributors' stocks in a complete range of B-type steel sprockets—½" through 2" pitch. Dodge quality Roller Chain is packaged in 10-foot lengths—also available in 50-foot and 100-foot reels. Save time—save money—keep production rolling—get Dodge Taper-Lock Sprockets and Roller Chain from your Dodge Distributor.

DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Ind.

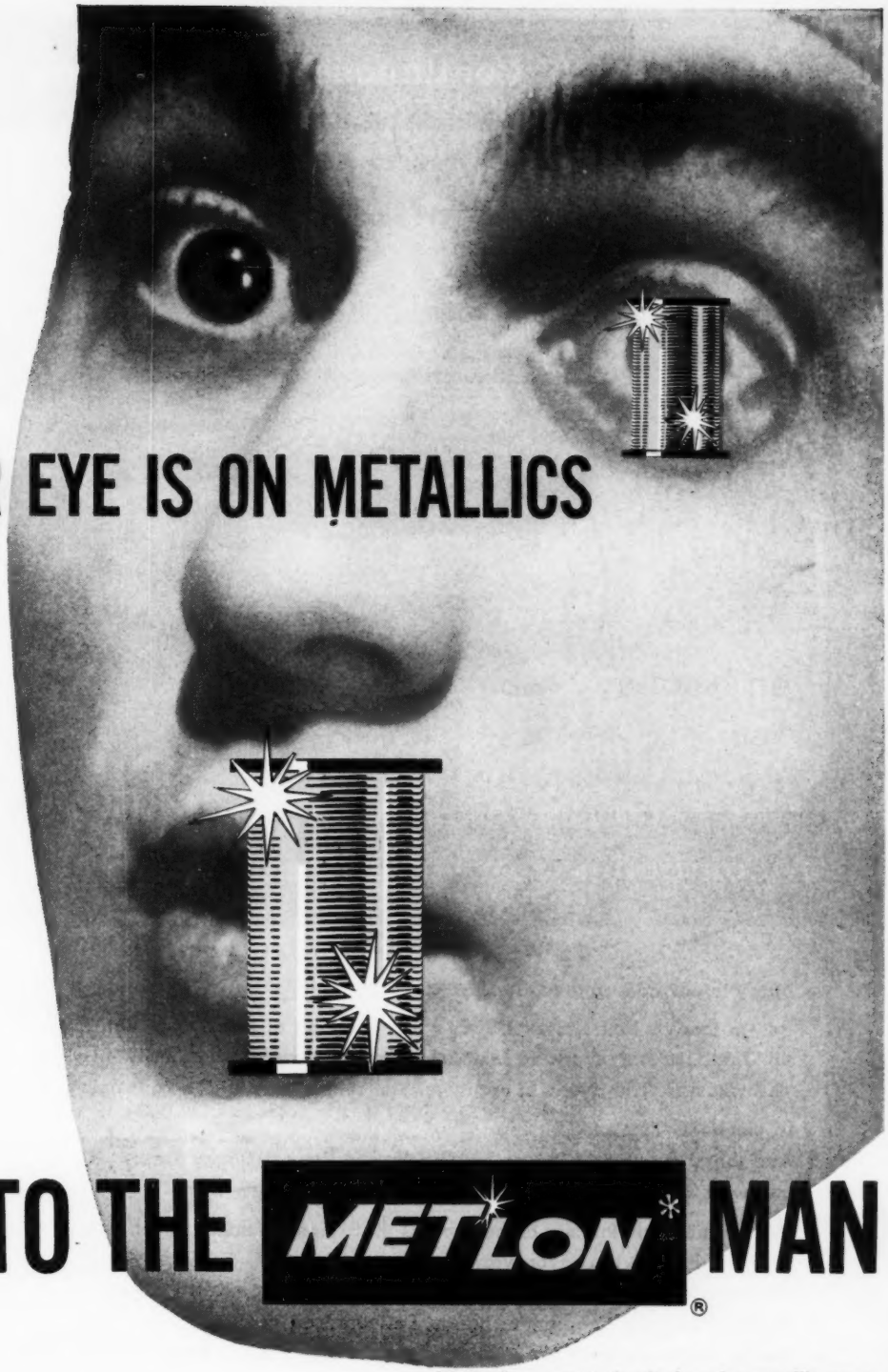
CALL THE TRANSMISSIONEER, your local Dodge Distributor, for valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write us.

THERE'S ONLY ONE TAPER-LOCK, THE BUSHING THAT MOUNTS FLUSH!

Standardize; economize with Taper-Lock, the bushing that is interchangeable in Dodge sprockets; sheaves, couplings and conveyor pulleys. *More than 2,000,000 in use!*

DODGE

of Mishawaka, Ind.



IF YOUR EYE IS ON METALLICS

TALK TO THE METLON* MAN

Metlon has a reputation for knowing metallic yarns. Our sales engineers are specialists; they know what can and has been done with metallics. They also know what can't be done. More important, they are as near to you as your telephone (or mail box). Just phone (or write) Metlon, and you'll be getting the best metallic know-how in the country, without cost or obligation.

* *the non-tarnishing metallic yarn*

Metlon Corporation, 432 Fourth Ave., New York 16, N. Y., Tel.: MU 3-5962
A Division of Acme Backing Corporation

For more information, write direct or use Reader Service post card.

IRC Continuous Process Rayon Yarn

A Continuing Story of 15 Years of Leadership

Many things add up to leadership.

But—in today's fabric market there's just one kind of leadership that adds up. The kind that means no headaches for the next man on the list. The weavers. The dyers. The cutters. The retailers. And—the consumers.

In our book—that's leadership.
And that's the kind of leadership Continuous Process Rayon Yarn has won, and maintained through fifteen years. Here's why.

IRC's Continuous Process is the process that spins, bleaches, washes, dries, twists rayon yarn in one continuous sequence of operations. Mile after mile. As a single strand. Untouched by human hands. Delivered on precision wound beams or virtually knotless cones, there is a uniformity that simply cannot be achieved when yarn is bulk processed—and it costs you no more.

In any business—leadership isn't an easy thing to achieve. It's something everyone wants. IRC's Continuous Process made it.

Industrial Rayon Corporation

Cleveland, Ohio

Producers of Continuous Process Rayon Yarns and Tyron® Cord for Tires.

Sales Office: 500 Fifth Ave., New York 36, N.Y.

GAIR can help PROTECT YOUR PRODUCT with engineered PACKAGING

Have you ever counted the hazards your product faces during transportation and warehousing? The rough handling and battering, plus pressure from stacking, are conditions that demand positive protection.

To solve the problem, Gair engineers design shipping boxes to give *two-way protection:*

1. Protection from external damage and shock – by the correct choice of box style;

2. Protection from internal shifting and breakage – by scientifically-designed inner packing.

In addition, Gair makes sure that the box is simple to pack.

Take advantage of this engineering service . . . without charge. Check with the Gair factory nearest you to learn how. Learn, too, how Gair's assured material supply and delivery service can help give you the best in corrugated shipping boxes.

Ask for our booklet on the sealing of boxes.

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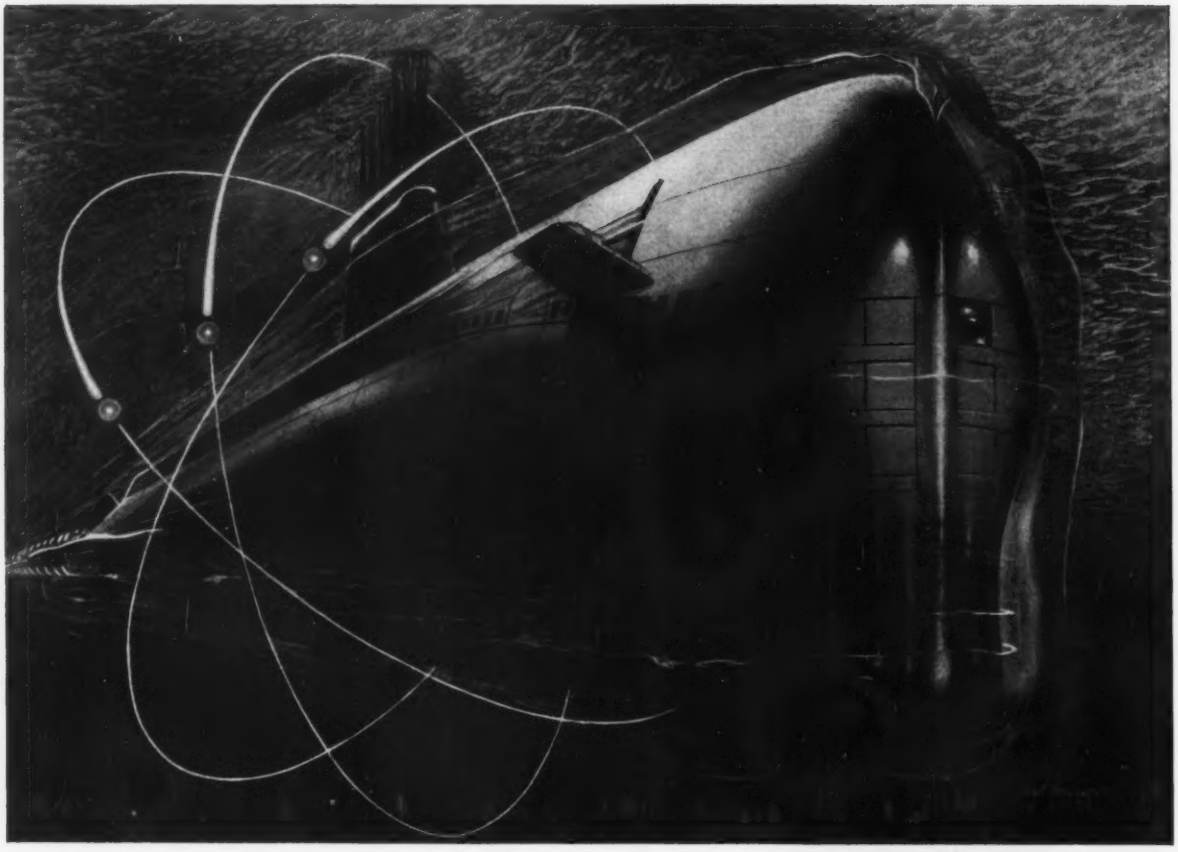


ATOMIC SUB BUILDERS

Rely on World's Greatest Lubrication Knowledge and Engineering Service

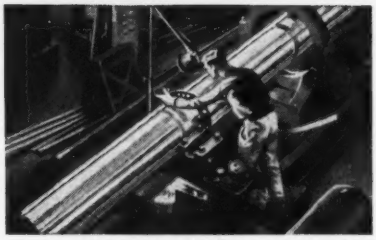
AFTER 54 years of building over 300 "conventional" submarines for the U. S. Navy and our allies, Electric Boat Division, General Dynamics Corp., marks its entry into the atomic age with the launching of the "Nautilus"—world's first atomic powered submarine.

Electric Boat, with its sprawling foundries and shops along the Thames River at Groton, Conn., is really many industries in one. It casts its own metals—both ferrous and non-ferrous. It shapes and machines metal parts—from thick armor plate to parts with microscopic tolerances. It has 27 overhead cranes, marine railway and land railroads, a fleet of trucks, low- and high-pressure compressors, its own Diesel power plant.

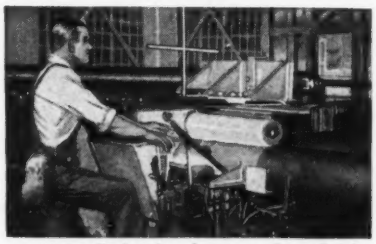
This wide variety of costly machinery represents almost every lubrication condition found in modern industry. That is why Electric Boat relies 100% on Gargoyle lubricants and a program of Correct Lubrication—has done so for 34 years.

★ ★ ★

You can give your plant, mine or mill this same unsurpassed protection. Just call your Socony-Vacuum representative.



A snorkel intake tube being machined to very precise tolerances on one of the large lathes in the Groton plant.



Hydraulic bender shapes section of 8-in. steel pipe in two minutes. This operation formerly took a full day.

SOCONY-VACUUM *Correct Lubrication*

FIRST STEP IN CUTTING COSTS

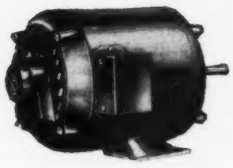
SOCONY-VACUUM OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

SOCONY-VACUUM

GET TOP PERFORMANCE FROM YOUR EQUIPMENT . . .

Choose Century MOTORS

From the Wide Range of Types of



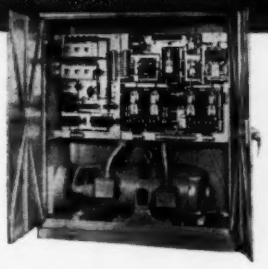
SINGLE PHASE:

Split Phase Induction—⅛, ¼, ⅓ H. P.

Capacitor—⅛ to 20 H. P.
Repulsion start, brush lifting, induction—½ to 7½ H. P.

Write for Bulletin Nos.:

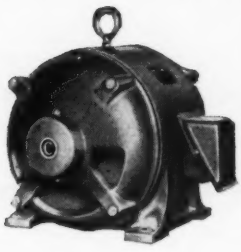
Split Phase 1-5P1
Capacitor 1-1P3
Repulsion Start 2-1P1



SELECTIVE SPEED DRIVE:

A complete line of adjustable speed drives for coordinating all kinds of production processes.

Write for Bulletin No. 11-1P1



POLYPHASE:

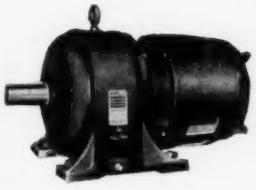
Squirrel Cage Induction—⅛ to 400 H. P.

Wound Rotor Motors—1 to 400 H. P.

Synchronous Motors—20 to 150 H. P.

Write for Bulletin Nos.:

Squirrel Cage, Drip Proof—6-1P1
Squirrel Cage, Splash Proof—6-1P3
Squirrel Cage, Enclosed Fan Cooled—6-1P41
Squirrel Cage, Explosion Proof—6-1P45
Wound Rotor—6-3P1

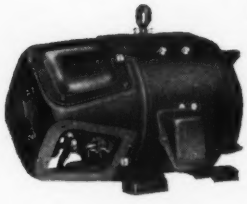


GEAR MOTORS:

⅛ to 15 H. P., single, double and triple gear reduction.

Write for Bulletin Nos.:

⅛ to ¾ H. P. . 4-5P21-61
1 to 15 H. P. . . 4-1P31



DIRECT CURRENT:

All capacities—⅛ to 300 H. P.
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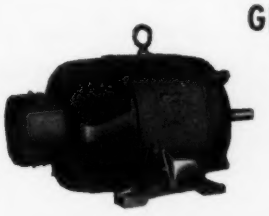

GENERATORS:

AC, .63 to 250 KVA
DC, .75 to 200 KW

Write for Bulletin Nos.:

AC, .63 to 250 KVA—18-1P21
DC, .75 to 200 KW—18-1P1

CE-825R

Motors listed above are available in Open Rated Drip Proof, Splash Proof, Totally Enclosed Fan Cooled and Explosion Proof frames—and with a dozen different methods of mounting. They are unusually quiet starting and running and unusually free from vibration.

Century C MOTORS

CENTURY ELECTRIC COMPANY
1806 Pine Street, St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

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To CENTURY ELECTRIC COMPANY
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Please send me the following bulletins:
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Name ..... Title .....
Company .....
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City ..... Zone ..... State .....

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Demands finest equipment . . . gets it!

Bossong Hosiery Mills water chillers for completely

Dual CenTraVac centrifugal compressor installation automatically adjusts to varying cooling requirements, operates unattended, gives stable operation down to 5% of capacity!

Chief engineer P. W. Redding of the famous Bossong Hosiery Mills, Asheboro, N. C., knows there's no substitute for quality in the manufacture of fine fashion hosiery. And that goes for the part *air conditioning* plays in hosiery making, too!

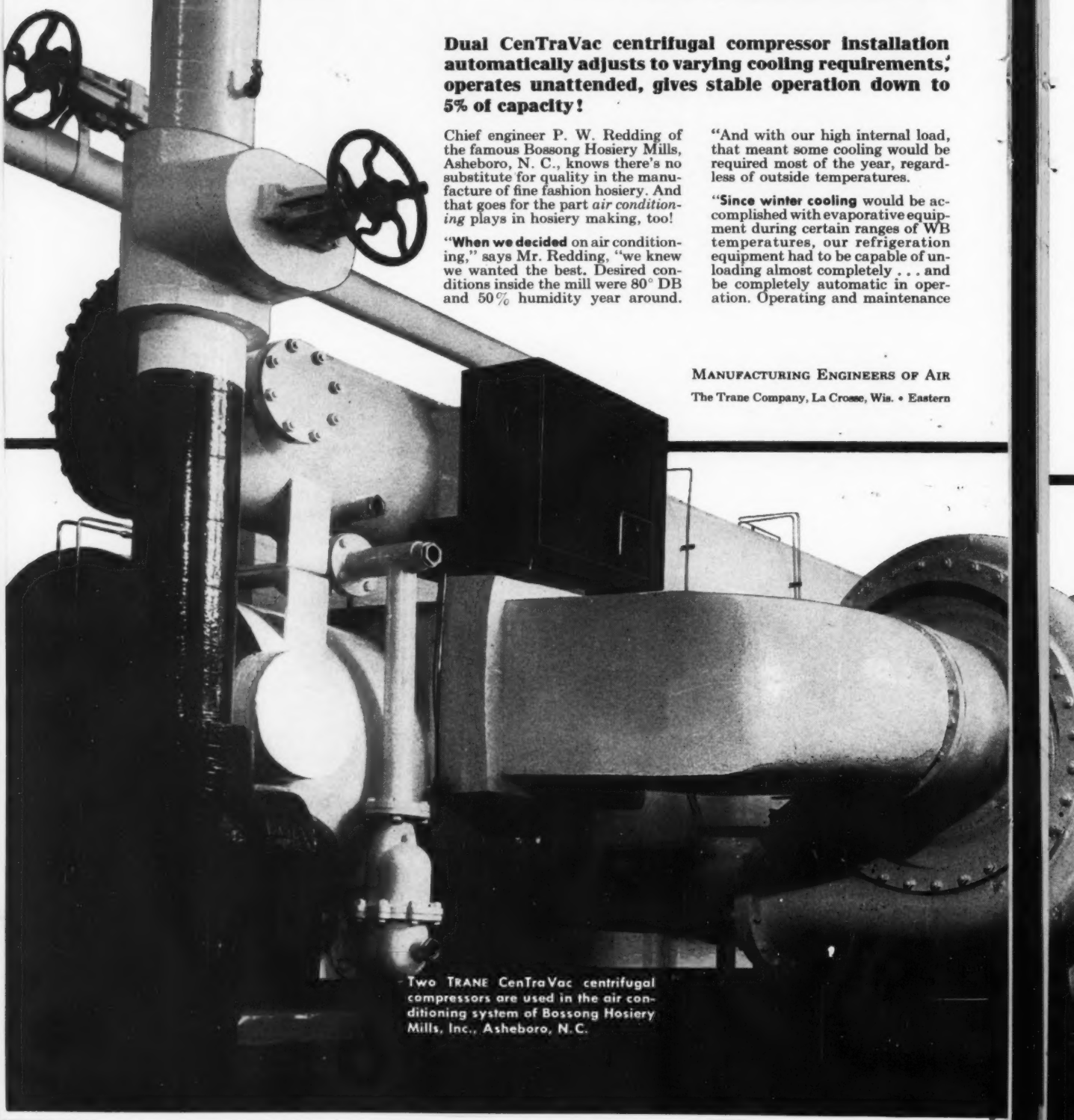
"**When we decided** on air conditioning," says Mr. Redding, "we knew we wanted the best. Desired conditions inside the mill were 80° DB and 50% humidity year around.

"And with our high internal load, that meant some cooling would be required most of the year, regardless of outside temperatures.

"**Since winter cooling** would be accomplished with evaporative equipment during certain ranges of WB temperatures, our refrigeration equipment had to be capable of unloading almost completely . . . and be completely automatic in operation. Operating and maintenance

MANUFACTURING ENGINEERS OF AIR

The Trane Company, La Crosse, Wis. • Eastern



Two TRANE CenTraVac centrifugal compressors are used in the air conditioning system of Bossong Hosiery Mills, Inc., Asheboro, N.C.

installs Trane CenTraVac® automatic air conditioning

costs had to be kept to a minimum."

In the air conditioning system which was designed and installed for Bossong by Buensod-Stacey, Inc., Greensboro, N. C., *two* TRANE CenTraVac centrifugal compressors were employed.

Since each unit can unload to 10%, stable operation is possible *down to 5% of the total refrigeration capacity*!

The system automatically adjusts to varying cooling requirements and reduces power consumption in almost direct proportion to load reductions. No special attendant is needed. In fact, the only manual operation the system requires at all is the starting of the fans and pumps of the air washer after the Sunday shutdown.

Maintenance costs are low, too. The CenTraVac's hermetic design eliminates the need for shaft seals, gear box, heavy thrust bearings and couplings. Minimizes danger of costly refrigerant loss. Eliminates need for constant supervision.

Worker morale has definitely gone up since the installation of air conditioning, reports Mr. Redding, and the benefit to production has been especially gratifying.

Want more facts? Just call your nearest TRANE Sales Office or write TRANE, La Crosse, Wisconsin.

Install

TRANE

CenTraVacs

for completely automatic air conditioning

CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

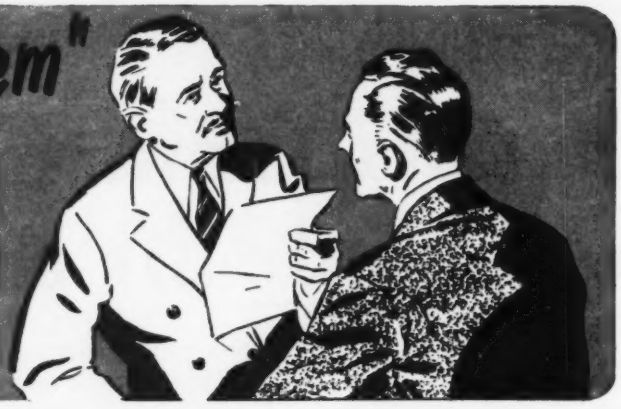
Mfg. Div., Scranton, Pa. • Trane Co. of Canada, Ltd., Toronto • 90 U.S. and 15 Canadian Offices

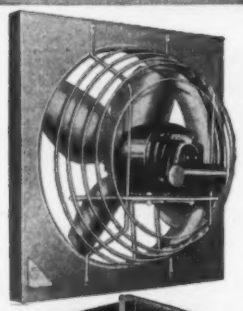
one source · one responsibility

***Famous for quality,** these Bossong trademarks are the mark of fine hosiery . . . manufactured on quality equipment . . . in an accurately controlled climate engineered by Buensod-Stacey, Inc., using quality* TRANE *CenTraVacs.*

"Here's My Problem"

CUSTOMER:
First, one of our older buildings has areas which need spot ventilation. Then, in another building, we're going to need large-capacity exhaust to get rid of dust and moisture. Finally, we need additional capacity in an old system where we've just installed some air cleaning equipment. Now, my problem is . . .





Which "Buffalo" Fan Shall I Use?

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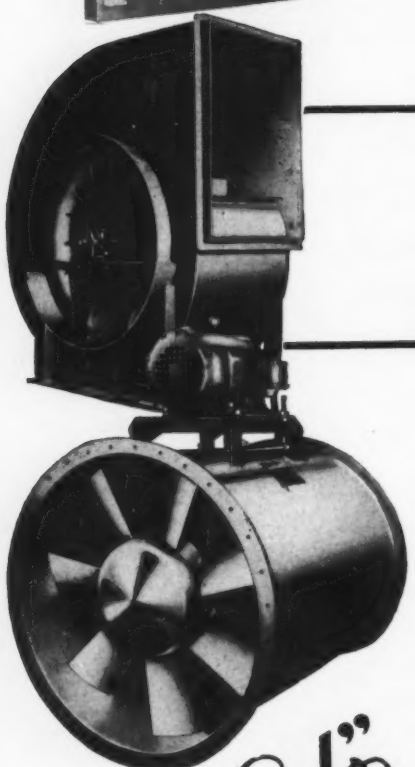

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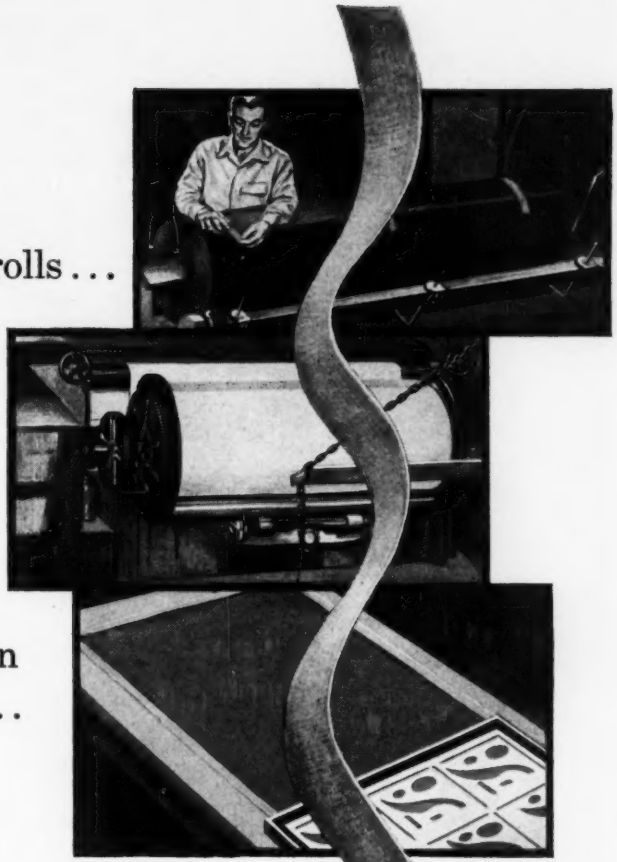

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holding cloth to table in
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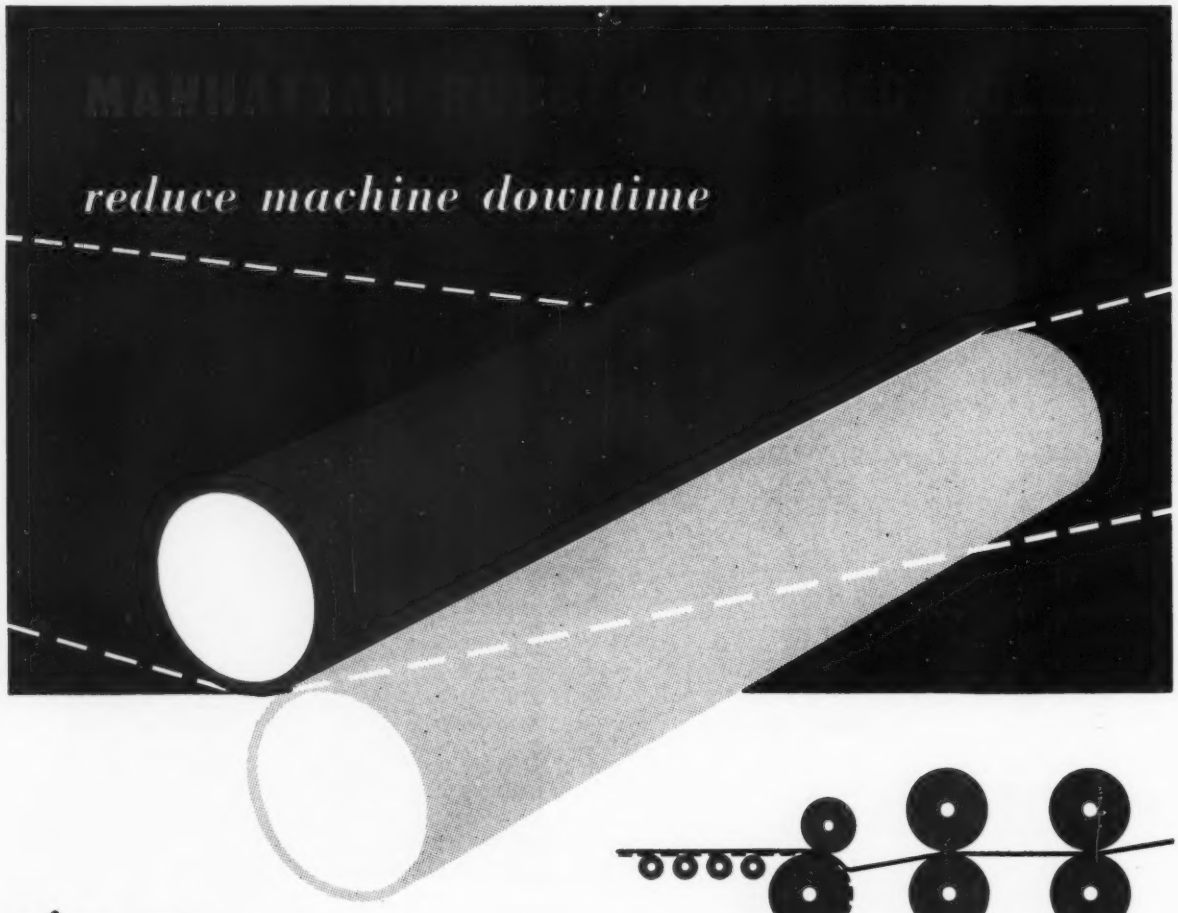

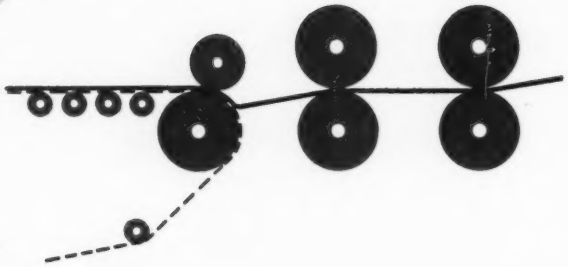

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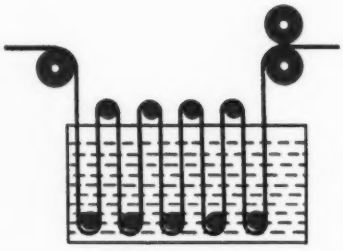

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TEXTILE WORLD
Sept., 1954 • Vol. 104 - No. 9

For Successfully TRAINING SUPERVISORS--

▸Supervisor-training programs that look good on paper often produce results below expectations. For training to be successful, improvement must start at the top, the program must be based on the needs of the supervisors, and the training must teach more than just technique.

Improvement Must Start At the Top

By DONALD DEMING

FIRST-LINE SUPERVISORS are the point of contact of management with workers, the people who actually make a company's product. Through this point of contact, all work orders are passed to the people who do the labor and all management policies of wages, hours, job conditions, discipline, etc. are administered and sold, or not sold.

What constructive steps can be taken to strengthen this important link in management's chain?

Managers and supervisors have similar interests in their own and the company's success. With this basic fact, you'd think it would be easy to outline and sell management's view to the supervisor.

Here is the first stumbling block. Management usually does assume it will be easy to sell its views to supervisors. The typical response on reading an article or pamphlet is likely to be, "Say, there are some good ideas here; better circulate this." The usual reaction as the material makes its rounds is, "Same old stuff, but pretty good at that; wish the boss would read this."

Why doesn't this method of communicating ideas result in better understanding and teamwork? The reason is that the method is usually resented. The chief cause for the resentment is the offhand approach.

This feeling of resentment is serious because it destroys the teamwork and the feeling of identity between management and supervisors.

Poor Practices Start at Top

Managers too often believe that it is the supervisor's failure to comprehend management principles that is the problem and that some manual or expert can solve the problem. However, the truth is that poor practices of supervision are usually a result of poor practices by management. This fundamental cause accounts for most failures of training programs.

The manager of an organization seldom realizes how strong his influence actually is. Each mill has a personality and character different from all others; and this individuality is, to a large degree, the reflection of the manager's character. The manager is the one person vested with complete responsibility and authority; and each member of management, including those at the lowest level of management, will strive to emulate the manager. The first-line supervisor, in handling his problems, is a reflection of his picture of management, modified and disguised by his own peculiar traits of personality.

What the manager emphasizes by his personal efforts will be emphasized all down the line; what he passes off lightly will get little consideration down the line. Effective emphasis is expressed by interest, participation, and follow-up; emphatic words carry little weight. Many a subordinate has learned that his boss, in a belief that a forceful statement eliminates the necessity for follow-up, has developed the habit of emphasizing what he doesn't intend to follow up.

If instructions, orders, and guidance are offhand and impersonal, supervisors will soon be using their version of the same practice in handling their problems.

Start Improving at the Top

If improvement is made at the top, general improvement will result because the supervisors will follow the lead of improved managers.

A management that has made a serious self-appraisal and sought out means for self-improvement will invariably want to give its subordinates the same benefits. This effort should lead to a program for communicating plans and for learning more about the problems encountered by all members of the management team.

The form the program takes is of no great importance. It is participation by management that is the important thing. The supervisor will then feel that he will benefit; and if the manager is sincere in the program, he must feel that he is continuing to benefit.

A program that grows out of frank discussion of job problems by management and supervisors is likely to create the greatest interest and enthusiasm, but courses put on by outside experts can also be of real value if management participates. Programs put on to elevate some group are likely to be a waste of money.

CONTINUED ON NEXT PAGE

For Successfully Training Supervisors—

Program Must Be Based On Supervisor's Needs

By JAMES E. GARDNER
Assistant Director of Personnel Research, Fieldcrest Mills

AN EFFECTIVE TRAINING PROGRAM stems from an analysis of needs. Such an analysis may reveal needs common to all supervisors, needs peculiar to supervisors at certain levels, or needs that apply to specific individuals.

Of course, each company must make its own analysis of training needs, because supervisory needs differ from mill to mill. In this analysis, requirements set by the level of the job can easily be neglected in eager efforts to train supervisors in general or to develop individual supervisors. Further, the factor of attitudes may be neglected in the analysis of training needs.

The questions to be answered are: What does a foreman need that an assistant foreman does not need? What do they need in common?

Obviously, a man who is promoted from rank-and-file worker to assistant foreman to foreman retains a hard core of knowledge, attitudes, and characteristic behavior through these promotional steps. He is basically the same man at all three stages. He will acquire more knowledge and skill and will modify his attitudes along the way, but he may fall short of expectation unless his development is given meaningful direction.

Attitudes Need Direction

A worker who disagrees with quality standards or distrusts timestudy will not genuinely accept these programs as good simply because he is made an assistant foreman. The acceptance of company goals, programs, and policies and the development of a company point of view will occur neither automatically nor instantly. The assistant foreman will usually need time and help to acquire feelings and attitudes that identify him as part of management.

A new assistant foreman is usually given at least the minimum amount of training needed to run the job, but this training is rarely concerned with his attitudes.

Experience and job associations in his new job are relied on to bring about or strengthen a desired point of view. However, such a point of view may not develop. Neither does promotion from assistant foreman to foreman automatically make it happen; the old attitudes carry over just as old habits carry over.

A common weakness of newly promoted foremen is the failure to delegate any of the supervisory functions. As assistant foremen, they handled the small details; as foremen, they insist on continuing to handle them. Similarly, if they didn't think much of company policies or programs before promotion, promotion itself doesn't change the attitude.

Must Know Needs

It is necessary to know what skills, knowledge, and attitudes both an assistant foreman and a foreman need to have to be effective in those jobs. To the extent that efforts are made to meet these needs, the development of the supervisor is aided.

In some mills, there may be a real difference between the two jobs in skill and knowledge requirements. These differences may be differences in job duties or differences in the level of competence needed in similar duties.

With a difference in degree of responsibility, it may be wrong to think that there is a corresponding difference in training needs. A foreman has the major responsibility in his department for production, quality, labor and supply usage, training, etc. The assistant foreman may also have some responsibility, but less than the foreman, in these matters. In such cases, it may be assumed that the foreman should receive comprehensive training in these subjects, whereas a smattering will do for the assistant foreman.

However, on the score of attitude, aside from knowledge and skills, this assumption is questionable. Although a foreman might have the primary responsibility, the stronger influence on employees is likely to be exerted by the assistant foreman because he is closer to the employees. Consequently, to the extent that employee reactions come from the attitudes of supervisors, these reactions probably come largely from the attitude of the assistant foreman.

Attitudes of Assistants

For that reason, it is necessary that the assistant foreman as well as the foreman have a desirable attitude toward company programs and policies. Otherwise, these matters may flounder as they are carried down to the rank-and-file employees.

A foreman, for example, may be enthusiastic about training programs or timestudies, and he may personally meet with employees to explain such projects; but it is doubtful if complete understanding or firm formation of attitude develops among employees at that point. Employees are more likely to be influenced through informal contact with the assistant foremen. Unless the assistant foremen share the foreman's enthusiasm, employee reactions may be unfavorable.

There is no easy solution to the problem of fostering attitudes in assistant foremen. However, it can be expected that attitudes will be modified or strengthened through thorough understanding of a subject. So a partial solution is to give assistant foremen, in those matters in which attitude is important, as comprehensive a knowledge as is given to the foreman himself.

There can be no real supervisory development without some development of attitude.

Technique Alone Is Not Enough

By EUGENE E. JENNINGS

WORKERS HAVE AN UNCANNY SENSE of detecting that their supervisors have acquired a new technique but have kept the same attitudes. A supervisor-training program that puts too much attention on techniques, without emphasis on attitudes, is not likely to improve the performance of the supervisors on the job.

Taking an interest in people, probably the oldest technique of them all, is difficult for the supervisor who does not like people. If a supervisor who does not like people tries to take an interest in their welfare, he can

CONTINUED ON PAGE 260

How the FLAMMABLE FABRICS ACT Affects You

By **MICHAEL LONDON,** Assistant Editor, TEXTILE WORLD

► On July 1, 1954, the Flammable Fabrics Act went into effect. The act, designed to ban from the market certain types of fabrics that are dangerous because of their unusually flammable nature, affects principally producers of finished apparel fabrics. However, it can, under some circumstances, apply to commission finishers, producers of gray goods, and manufacturers of nonapparel farbrics that can be used for clothing.

FINISHED FABRICS and loom-finished fabrics used for the following purposes come within the scope of the Flammable Fabrics Act:

Outerwear or underwear

Hats, where the fabric is part of a covering for the neck, face, or shoulders

Gloves that are more than 14 ins. long or are affixed to another garment

Footwear that constitutes hosiery or is affixed to or part of another garment

Excluded from the act are fabrics used for the following apparel purposes:

Interlinings or other unexposed parts of wearing apparel

Hats, gloves, and footwear other than those listed above

IMPORTANT—In shipping apparel fabrics excluded from the act, the shipper should use an invoice or other paper clearly designating its intended use.

Questions and Answers—

Q. Who is affected by the act?

A. Manufacturers and converters of finished apparel fabrics and knitters manufacturing finished wearing apparel come within the law.

Yarn manufacturers are not directly affected by the act.

Gray-goods producers are not subject to the law unless they produce loom-finished apparel fabrics.

Commission finishers are not subject to the act unless they violate the terms of a contract and apply a finish that causes the article to become subject to the law.

Q. Are scarves and handkerchiefs covered by the act?

A. Yes, if they are over 24 sq. ins.

Q. I manufacture a fabric intended for a nonapparel use. However, this fabric is sometimes used in clothing. How am I affected by the act?

A. To avoid any possible trouble, you should be certain the fabric meets the requirements of the law. Even though it carries an invoice designating that the cloth is to be used only for nonapparel purposes, the fabric may still be diverted later for use in clothing.

Testing and Guarantees

It is illegal to produce a finished fabric so highly flammable as to be dangerous when worn by individuals. Testing requirements for determining the degree of flammability have been simplified by the incorporation of tests for classes of fabrics. With these tests, a manufacturer need not test many of his fabrics but instead may use the published results of tests already performed on his particular class of fabrics. However, if published results of class tests are not available, he must perform his own tests.

Either way, the producer can then give a guarantee to his customer stating that the fabric meets the requirements of the law. The guarantee is not necessary, but it is probable that the customer will ask for it. The guarantee may be either a separate guarantee covering only a particular shipment or a continuing guarantee filed with the Federal Trade Commission. Continuing guarantees must be renewed every three years.

Fabrics are classified generally into plain-surfaced fabrics and raised-surface fabrics. A plain-surfaced fabric may have a fancy woven, knitted, or flock-printed surface; a raised-surface fabric has an intentionally raised fiber or yarn surface such as a pile, nap, or tuft.

CONTINUED ON PAGE 57

CAUTION!

It is the responsibility of every manufacturer to find out precisely how each of his fabrics is affected by the Flammable Fabrics Act and exactly what he must do and avoid doing to stay out of trouble.

The information published here is the best interpretation and latest applications available to us at the time of this writing. However, we cannot be held responsible for litigation arising from lack of information, misinformation, or changes caused by developments in legal or technical interpretations and experience.

Most textile trade associations are prepared to answer questions about the act and its applications. Or you can write Federal Trade Commission, Washington 25, D. C., administrator of the act.
—EDITOR.

Relationship Between Fabric Classes, Tests,

Character of Fabric (woven or knitted)	Test method	Fabric class	Who performs test
Plain Surface 2 oz. per sq. yd. and over (including coated fabrics of this weight except nitrocellulose-coated fabrics).	CS 191-53	Class based on type of fabric Examples: Denim Faille Broadcloth	Guarantor's or published results may be used
Plain Surface under 2 oz. per sq. yd.	CS 191-53	Class based on fiber composition, construction, and finish Example: Cotton voile Gray construction 60x52 Starched finish	Guarantor's or published results may be used
Raised Surface	CS 191-53	Raised fiber surface contains more than 90% protein fiber	Guarantor's or published results may be used
		Fabric surface has dense pile or looped yarns of uniform, short length Example: Velvets Velveteens Velours Corduroys	
		Other raised fabrics	Must be tested by guarantor
Contains nitrocellulose finish, fiber, or coating	CS 192-53	No classes	Must be tested by guarantor
Contains a fiber not in commercial use before May 11, 1954	CS 191-53	No classes	Must be tested by guarantor

Testing conditions—

*The initial test is defined as a test performed on two separate pieces of the fabric.

According to Commercial Standard 191-53, all fabrics to be tested must be washed or dry cleaned. However, if a fabric is not designed to be washed, it need not be laundered for the test, provided the fabric is marked or labeled with information that the fire-retardent finish will be removed if the fabric is washed.

A coated fabric need not be dry cleaned before testing.

Only the fabric surface exposed during wear need be tested. In raised-surface fabrics, if the raised side is to be unexposed during wear, an invoice or paper

and Guarantees

Test results	Guarantee
Satisfactory (burning time over 3½ secs.)	Guarantees based on one test can be given
Burning time between 3½ and 6 secs.	Guarantees based on the initial test* can be given, but subsequent tests must be made at least every three months while the fabric is in production
Burning time exceeds 6 secs.	Guarantees based on the initial test can be given, but subsequent tests must be made at least every six months while the fabric is in production
No ignition	Initial test will suffice for guarantee
Does not exhibit surface flash or ignite	Guarantees based on one test can be given
Burning time between 4 and 7 secs. with ignition of base fabric	Guarantees based on the initial test can be given, but subsequent tests must be made monthly while the fabric is in production. If production exceeds 50,000 yds. per month, test every 50,000 yds.
Tests at two consecutive monthly or 50,000-yd. intervals show burning time not below 4 secs.	Guarantees based on the initial test can be given, but subsequent tests must be made every three months. If production exceeds 100,000 yds. per three months, test every 100,000 yds.
Burning time exceeds 7 secs.	Guarantees based on the initial test can be given, but subsequent tests must be made every six months
Surface flash but no fusing or igniting	Guarantees based on the initial test can be given, but subsequent tests must be made every six months
No surface flash or ignition	Guarantees based on initial test can be given
Burns less than 1.2 ins. per sec.	Guarantees based on yearly tests can be given
Same as for plain-surface fabrics under 2 oz. per sq. yd.	Same as for plain-surface fabrics under 2 oz. per sq. yd.

should be used to designate that the raised side is to be used only in the covered or unexposed parts of garments.

If tests on a fabric made subsequent to the initial test show a burning time of another category of fabrics, the fabric should be tested thereafter under the testing requirements of the new time.

AMENDMENT TO LAW

The table at the left shows changes made by Congress and signed into law by President Eisenhower late in August.

The amendment lowered from 4 secs. to 3½ secs. the "critical burning time" for plain-surface fabrics intended for apparel use. The new test standards took effect immediately.

The amendment kept the old 4-sec. requirement for raised-surface fabrics intended for apparel use.

As we went to press, the Federal Trade Commission, administrator of the act, was preparing administrative rulings to cover the amendment and to clarify the status of plain-surface scarves. The new law did not exempt scarves and, except for relaxing the test standards for plain-surface fabrics, did not modify the original Flammable Fabrics Act.

Classes are further broken down by fabric weight and type of raised surface. The testing and guarantee procedures are summarized in the accompanying chart.

When You Furnish a Guarantee You Must Retain Records

Whether your guarantee is based on class tests or your own tests, you must keep certain records. When you test a fabric, the record should contain the style or range number, fiber composition, construction, finish, a swatch of the fabric tested, and the test results.

If the guarantee is based on a class test, the records should include the identification of the class test, fiber composition, construction, finish, and a swatch of the fabric guaranteed.

The records must be kept for three years from the date the test was performed.

Acceptable Plain-Faced Fabrics

A group of nine textile associations (American Cotton Manufacturers Institute, Inc.; Association of Cotton Textile Merchants of New York; National Association of Cotton Manufacturers, Inc.; National Association of Finishers of Textile Fabrics; National Cotton Council of America; National Federation of Textiles, Inc.; Textile Distributors Institute, Inc.; Textile Fabrics Association; and Underwear

Institute) has published two lists of plain-faced fabrics that have been found acceptable under the new law. These lists are identified as the Combined Textile Association Test Series A and B.

Series A lists plain-faced fabrics weighing 2 oz. per sq. yd. and over; Series B lists plain-faced fabrics weighing less than 2 oz. per sq. yd. None of the fabrics include nitrocellulose fiber, finish, or coating.

Combined Textile Association Test Series A

Plain-Woven Fabrics

1. Print cloth, including fine plain (longcloth), and gingham
2. Sheetings, including coarse, medium, and fine
3. Rib fabrics, including broadcloth, poplin, bengaline, plain rep, tension rep, warp rep, faille, and shantung
4. Chambray, including work shirting (chambray) and combed shirting (chambray)
5. Voiles, including seed voile, shadow stripe, splash voile, pique, or corded voile
6. Lawns, including dotted swiss (clipped spot), lappets, and organdy
7. Osnaburg, including suiting (linene), crash, cretonne, ratine, éponge, hopsacking, and beach cloth
8. Ducks, including army ducks, single-filled flat ducks, double-filled flat (ounce) ducks, and combed ducks
9. Other plain-woven fabrics, including embossed crepes, embossed and blister crepes, gauze, airplane cloth, balloon cloth, matelassé, cotton-warp-rayon-filled flat crepe, and seersucker

Twill-Woven Fabrics

10. Twills, including drill, three-leaf twill, four-leaf twill, four-harness even-sided or serge twill, broken twills, whip cord cottonade
11. Steep twills, including gabardine, tricotine, French-back serge twill
12. Jeans
13. Denims, including expert or hickory stripes and covert
14. Other twill-woven fabrics

Satin Fabrics

15. Satins, including filling sateens, twill-faced sateens, warp sateen, and venetians
16. Other satin fabrics

Fancy-Woven Fabrics

17. Open (skip-dent) fabrics
18. Momie crepe
19. Piques, including Bedford cord, warp pique, fancy-woven pique, filling-cord pique, waffle cloth, and bird's-eye cloth
20. Leno-woven fabrics, including marquisette and mesh fabrics
21. Oxfords, including pin stripes and pin checks
22. Other fancys, including jacquards, corset batiste, tarlatan, dimity cords, checks, and pajama checks

Knitted Fabrics

23. Rib-knit fabrics
24. Jersey-knit fabrics
25. Other knitted fabrics

Rayon and Synthetic Fabrics (2 oz. per sq. yd. or over)

26. Circular knit
27. Dobby or jacquard
28. Pucker
29. Satins
30. Shantungs
31. Sharkskins
32. Taffetas
33. Twills
34. Warp-knit (tricot)
35. Crepes
36. Matelassé
37. Sheers and nettings
38. Bedford cord
39. Bengaline
40. Challis
41. Failles
42. Flannels
43. Gabardines
44. Linen-types and flakes
45. Ottoman
46. Poplins
47. Shirtings
48. Suitings

Those giving guarantees on the basis of the Combined Textile Association's Test Series A results must maintain a swatch of the guaranteed fabric, properly identified, and the identification of the test, which may be abbreviated CTAT-A. The test identification may be followed by the number of the fabric in the series; for example, CTAT-A-(19) for a pique.

Combined Textile Association Test Series B

Some fabrics, because of their flammability properties, will have to be retested at intervals. Therefore, the fabrics are listed according to expiration dates of present test results.

I. All-Cotton, Plain-Weave Voiles and Lawn

Good until Oct. 1, 1954

CTAT-B-1	60x52; 1.6 oz.; voile; in starched finishes
CTAT-B-3	76x72; 1.6 oz.; lawn; in pure, soft, starched, parchmentized, and resin finishes producing batistes and organdies
CTAT-B-4	80x76; 1.8 oz.; lawn; in starched finishes
CTAT-B-5	84x80; 1.34 oz.; lawn; in soft finishes producing batiste
CTAT-B-6	84x80; 1.50 oz.; lawn; in parchmentized finish producing organdy
CTAT-B-7	88x80; 1.8 oz.; lawn; in soft finish producing batiste
CTAT-B-8	88x80; 1.9 oz.; lawn; in soft and parchmentized finishes producing batistes and organdies
CTAT-B-9	88x80; 2.1 oz.; lawn; in starched and soft finishes
CTAT-B-10	96x92; 1.52 oz.; lawn; in pure and parchmentized finishes producing batistes and organdies

Good until Jan. 1, 1955

CTAT-B-2	68x76; 1.55 oz.; 70s voile; in resin finishes
CTAT-B-11	96x100; 2.1 oz.; lawn; in soft finish producing batistes

II. All-Cotton Dimity Weave

Good until Oct. 1, 1954

CTAT-B-12	76x69; 1.9 oz.; dimity; in starched finishes
CTAT-B-13	76x72; 1.9 oz.; dimity; in starched finishes
CTAT-B-14	86x82; 1.9 oz.; dimity; in starched finishes
CTAT-B-15	90x85; 1.72 oz.; dimity; in starched finishes
CTAT-B-16	90x89; 1.9 oz.; dimity; in starched finishes
CTAT-B-17	94x68; 1.7 oz.; dimity; in starched finishes
CTAT-B-18	94x68; 1.78 oz.; dimity; in pure finishes

III. All-Cotton Tissue Gingham

Good until Jan. 1, 1955

CTAT-B-19	73x64; 1.8 oz.; tissue gingham; in resin finish

IV. All-Cotton Dotted Swiss

Good until Oct. 1, 1954

CTAT-B-20	70x48; 1.8 oz.; dotted swiss; in starched finish
CTAT-B-22	96x92; 1.52 oz.; dotted swiss; in pure finishes

CONTINUED ON PAGE 298

ANNUAL SYNTHETICS SECTION

What **Synthetics** Are Doing

► **Synthetic-fiber and -yarn producers have directed most effort toward—**

- **Improving fiber weaknesses**
- **Developing high-bulk yarns**
- **Expanding dope-dyed colors**
- **Producing Type 6 nylon and super-strong tire-cord rayon**

By P. M. THOMAS, Editor, TEXTILE WORLD

THE DEVELOPMENT PICTURE in the synthetic-fiber and -yarn field is this:

• One new fiber, Teflon, announced.

• Most producers trying to eliminate defects in fibers and broaden uses by diversifying properties.

• Predyed fiber (also called dope-dyed, spun-dyed, and solution-dyed, in addition to various tradenames) available in more types of fibers and wider ranges of colors.

• High-bulk yarn, made usually by blending relaxed and unrelaxed fibers but also by crimping and looping, now appearing in some consumer products.

• Acrylic-fiber producers working toward a satisfactory continuous-filament fiber.

Improvements and Swings in Uses

Dynel (Carbide & Carbon Chemicals Co.)

Predyed Dynel, introduced last fall, now comprises half the Dynel production.

Dyeing properties of Dynel in fabrics said to be improved.

Heavy uses are pile fabrics, blends with rayon and acetate for women's dress goods, blends with cotton for knitted underwear fabrics, and industrial uses.

Acetate (Celanese Corp. of America)

Latest development is a heavy-denier crimped acetate fiber for high-bulk yarn. Main use probably will be in drapery and pile fabrics.

Fortisan (Celanese's saponified acetate) is said to be finding new uses in apparel fabrics, particularly as warp in women's blouses and men's shirtings.

X-100 Acetate (Celanese)

An acetate fiber now called X-100 reported almost ready for commercial production. First uses will be in apparel fabrics.

Acrilan (The Chemstrand Corp.)

Improved fiber properties said to include a round fiber cross section for better resilience and wrinkle recovery. Fiber extensibility, abrasion resistance, and dyeability reported improved.

High-bulk Acrilan yarn made with blends of relaxed and unrelaxed fibers is now appearing in jerseys and sweaters.

Rayon (Courtaulds)

Two new predyed colors have been added: turquoise and slate gray. These additions increase Courtaulds's basic predyed-fiber colors to 15.

X-51 (American Cyanamid Co.)

Improvements reported in dyeability and abrasion resistance.

X-54 acrylic fiber, still in the development stage, promises better performance than X-51 in dyeing properties, softness of hand, and abrasion resistance.

Nylon (E. I. du Pont de Nemours & Co., Inc.)

Opaque (dull) nylon produced on commercial scale. Modifications in hand, texture, and opaqueness made to filament-nylon yarn by the Taslan process [TW, July, '54, p. 75].

Orlon (Du Pont)

High-bulk yarns, made by blending relaxed and heat-stretched fibers, are being made with the Turbo Stapler and the Pacific Converter. Dyeability of Orlon said to be improved.

Dacron (Du Pont)

Pilling said to be reduced by various finishing methods, including wire-brush and heat-set treatments. Experiments promise a sharp reduction of static.

Acetate (Du Pont)

Predyed fibers, called "color-sealed," introduced in seven basic colors.

Type C acetate, which develops a wool-like crimp when it is immersed in boiling water, introduced.

Teflon (Du Pont)—see p. 65.

Velon (Firestone Plastics Co.)

A better shade of white in 5-gauge yarn for marquisette reported. Pastels, charcoals, and muted colors introduced for outdoor and upholstery uses.

Spun-staple yarns are being developed.

Glass (Glass Fibers, Inc.)

A new 150 yarn with 300 filaments instead of the normal 204 is said to give fabrics with greater flexibility, strength, and abrasion resistance.

Improvements in extrusion methods reported to have cut in half the denier variation in former glass fibers.

Nylon (National Aniline Div., Allied Chemical & Dye Corp.)

Type 6 nylon in filament and staple will be produced in limited quantities late this year. Ultimate production, including tow, will be 20-million lbs. a year.

Vicara (Virginia-Carolina Chemical Corp.)

New highly crimped Vicara is said to hold the crimp into the finished-fabric stage to add loft and bulkiness.

Rayon (American Enka Corp.)

Predyed fiber now made in 100, 150, 300, 600, and 900 deniers.

Nylon (American Enka)

Type 6 nylon available in 3-den. 1½-in., 2-in., and 4½-in. staple. Production expected shortly in Type 6 filament.

Rayon (Industrial Rayon Corp.)

Super-tenacity rayon for tire cord now being delivered.

Nylon (Industrial Rayon)

Production of Type 6 nylon staple will start by October; by the end of the year, Industrial expects to be in full production.

Rayon (Skenandoa Rayon Corp.)

Super-tenacity rayon for tire-cord use expected to go into production late this summer or early fall.

Acetate (Tennessee Eastman)

Heavy-denier filament acetate, described as crystal yarn with a flat cross section, introduced for use in high-style dress goods.

Heavy-denier (7 to 45 den. per filament) predyed continuous-filament fiber for automobile seat-cover fabrics developed.

Tidbits From Mills

. . . Tire-cord market will be a battle between rayon and nylon. Chief advantage of nylon is strength; disadvantage, compared to rayon, is said to be reaction to tire heat. Rayon is reported to take the heat better, and rayon producers are offsetting some of nylon's strength advantage by coming out with what might be called super-high-tenacity rayon.

. . . Current Type 41 Orlon has largely licked the problems of poor initial dyeing, loss of dyeability if heated, and uneven dyeing. But union-piece-dyed goods still give trouble.

. . . Orlon has kept its good abrasion resistance but lost a negligible amount of bulk.

. . . Dope-dyed continuous-filament Orlon will appear on the market this fall in black fleeces and tan overcoatings.

Coarse-Denier Blends--

New Fields for Rayon?

▶ Permanently crisp, lightweight fabrics are attainable by blending 8.0- or 5.5-den. rayon with 1.5-den. stock. Processing is not adversely affected, and the application of resin finishes can be reduced by 50 to 75%.

▶ Spinning limits twice as high as those possible with 100% of 3-den. rayon can be achieved, or fabric crispness can be doubled. The two blends followed through here indicate some of the possibilities.

By ARTHUR E. WEST
Textile Research Dept., American Viscose Corp.

CRISPER RAYON FABRICS without heavy resin treatments are now being made by blending coarse-denier rayon staple with 1.5-den. stock. Two examples that show promise at present and indicate what can be done are—

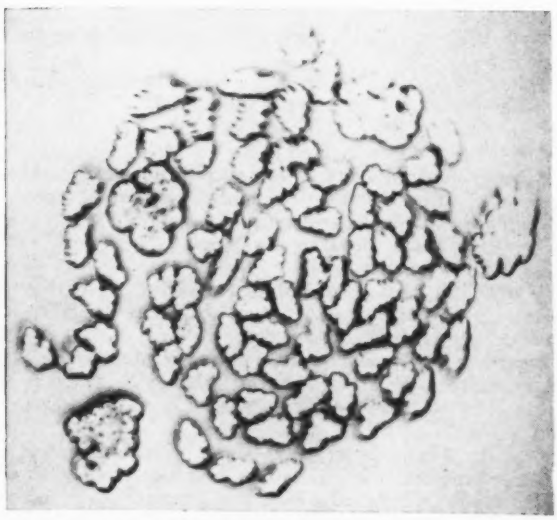
15% 8.0-den., 1⅜-in., dull crimped
85% 1.5-den., 1⅜-in., bright regular

and

60% 5.5-den., 1⅜-in., dull crimped
40% 1.5-den., 1⅜-in., dull regular

The 8.0-den. blend is being spun into 30s and 40s on the cotton system, and the 5.5-den. blend is going into coarser yarn numbers, around 20s.

Fabrics from these yarns can be treated with as little as one-fourth to one-half as much resin because the coarse deniers impart crispness to the fabric.



COARSER FIBERS tend to be thrown to the outer edge of the yarn in spinning, as shown by this 30s yarn spun from an 8.0-1.5-den. blend. Theoretically, a 30s yarn of 100% 1.5-den. fiber contains 118 fibers, whereas a blend of 85% 1.5-den., 15% 8.0-den. would have 101 1.5-den. fibers and 3.3 8.0-den. fibers. Notice how the four 8.0-den fibers in this cross section are on the outer edge.

Why Not Use 3.0-Den.?

The practical spinning limit of 3.0-den. is about 24s to 26s on the cotton system. But with an 8.0-1.5-den. blend the spinning limit is at least 40s. So crispness properties similar to 3.0-den. can be attained in finer yarn numbers with good processing results. (Remember that 3.0-den. rayon is as stiff as or stiffer than most cottons.)

For example, if we consider the stiffness of 1.5-den. fiber as 1.0, a 100% 1.5-den.-fiber yarn would have a relative stiffness of 1.0. A 3.0-den. yarn would have a stiffness of 4.0, the 5.5-den. about 13, and the 8.0-den. about 28.

(The stiffness of rayon fibers increases by the square of the ratio of the deniers. The ratio of 1.5-den. to 3.0-den. is 2; so a 3.0-den. fiber is 4 times stiffer than a 1.5-den. fiber.) To put it another way, you need only one-third as much 5.5-den. stock to impart the same stiffness as 3.0-den. and one-seventh as much 8.0-den. stock to achieve the same effect.

. . . Rayon now has a large portion of the looped tufted-carpet business, and several carpet and rug manufacturers are experimenting with carpet rayon for other constructions.

. . . Nearly all acrylic fibers, both staple and filament, are good in brushed, napped, or pile fabrics. Reasons: good resistance to crushing, matting, pilling, and tangling. Filament-yarn fabrics, such as Princeton's blankets and melton-type overcoatings, can be brushed to a spun-yarn appearance.

. . . Acrilan, now appearing in garments and blankets, was improved too late for wide use this fall; but watch it next year.

. . . Low percentages of nylon staple are going into blends with wool to improve abrasion resistance. High percentages can't be used because of pilling.

. . . Dacron will help wrinkle resistance of wool, but so much is needed that it creates a pilling problem unless high-twist yarn and a tight fabric construction are used.

. . . Biggest new fields for nylon flament right now are tire cord (Type 6 nylon) and tricot sheets.

. . . High-bulk Orlon staple is being produced in experimental quantities, but mill-processing troubles have been encountered.

. . . New methods of bulking filament yarns include Ban-Lon, Taslan, Helanca, and Flufflon.

. . . Allied Chemical's new nylon (a Type 6) is said to have a warm hand and to be easy to dye.

. . . Coarse-denier blends, being pioneered now in rayon, may be tried with other fibers for special effects.

Blend 8.0-Den. at Drawing

The organization for the 8.0-1.5-den. blend is separate up to drawing.

A regular cotton card was used for carding both deniers of stock. A 54-gr. sliver was taken off for the 1.5-den. and a 65-gr. sliver for the 8.0-den.

On the three-over-four Saco-Lowell breaker drawing, seven ends of 1.5-den. and one end of 8.0-den. were put up and a 55-gr. sliver taken off.

The finisher drawing, on the same type of frame, also delivered a 55-gr. sliver.

A Whitin Superdraft roving frame made 2.60-hk. roving for 30s and 3.50-hk. for 40s yarn.

Spinning for both yarn numbers was double creeled with a draft of 23.0 and a twist multiplier of 3.50. Frames were Whitin with the double-apron high-draft system, top apron gear driven.

Ends down on 40s were 45 per thousand spindle hours. On 30s, ends down were 35.

Fly in both roving and spinning was higher than normal when compared with 100% 1.5-den. processing.

Blending was done at drawing because:

1. The 8.0-den. stock might be carded out more in a blend because of the wide difference in deniers. Blend accuracy would be impaired.
2. Higher card productions are possible with 100% 8.0-den.
3. Blend uniformity can be more accurately controlled at drawing with a small percentage of one fiber and a wide difference in deniers.
4. Fewer cards become contaminated with the 8.0-den. stock.

Floor Blend for 5.5-Den.

The 5.5-1.5-den. blend was made on the floor before picking.

Carding was at normal speeds on regular flat-top cards, and a 55-gr. sliver was made.

The two processes of three-over-four Saco-Lowell drawing each had eight ends up, with a draft of 8.0, and delivered 55-gr. slivers.

The Saco-Lowell FS-2 roving frames produced 1.50-hk. roving.

Spinning on the Whitin high-draft frames was double creeled, with a draft of 26.5 and a twist multiplier of 3.50, on 20s.

Ends down for the 20s were 20 per thousand spindle hours.

Fly in roving and spinning was above normal when compared with 100% 1.5-den. processing.

How the Yarns Tested

The 40s from the 8.0-den. blend had a skein strength of 40.3 lbs. with an average yarn number of 39.92. Break factor was 1,609. Single-end tests averaged 6.04 oz. (standard deviation of 6.29) at 21.8 tpi., 12.3% elongation.

The 30s from the 8.0-den. blend gave a skein strength of 63.7 lbs. and an average yarn number of 28.96. Break factor was 1,845. Single-end strength was 8.86 oz. (standard deviation of 4.94) with 18.9 tpi., 13.8% elongation.

The 20s from the 5.5-den. blend showed a skein strength of 72.4 lbs. with an average yarn number of 20.25. Break factor was 1,466. Single-end strength was 10.87 oz. (standard deviation of 4.26) at 15.6 tpi., 10.1% elongation.

Skein strength was determined on a pendulum-type tester from 50 skeins (five skeins from each of 10 bobbins).

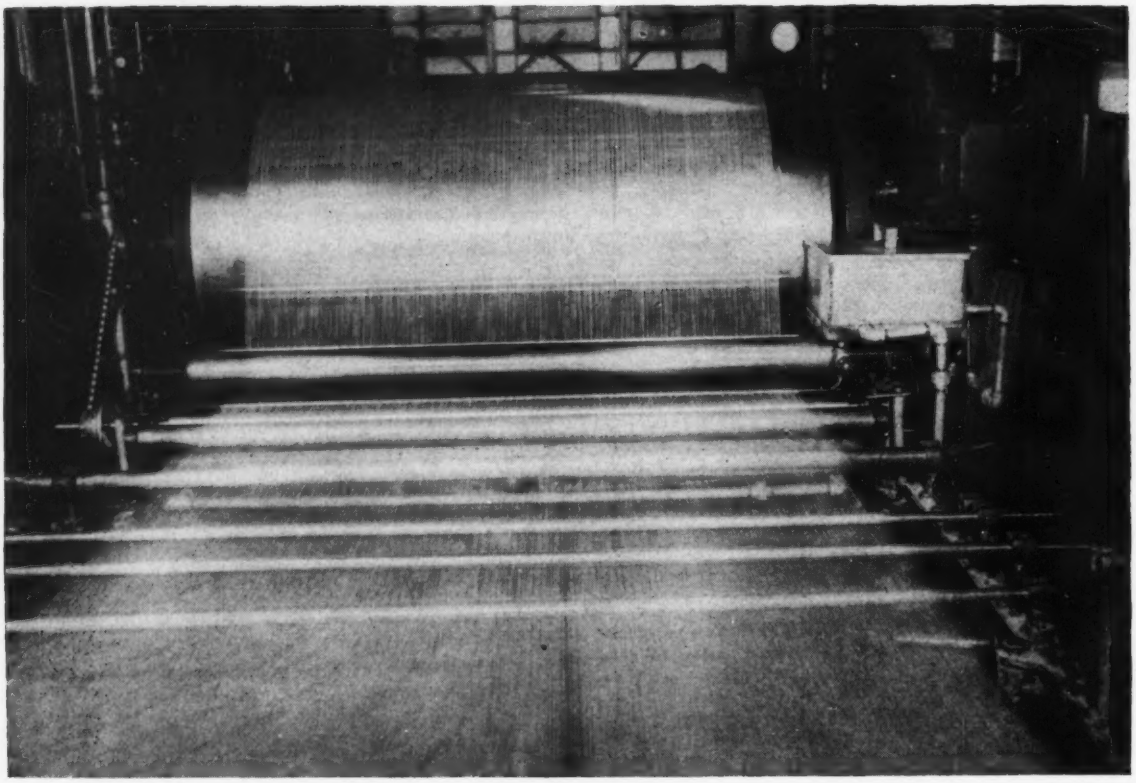
The dry single-end tests were performed on a Uster automatic inclined-plane tester. Twenty breaks were made from each of 10 bobbins.

Finish for Crease Resistance

Because the coarse-denier fibers impart permanent crispness to the fabrics, the only aim in finishing is usually for crease resistance and washability. That's why less resin has to be used.

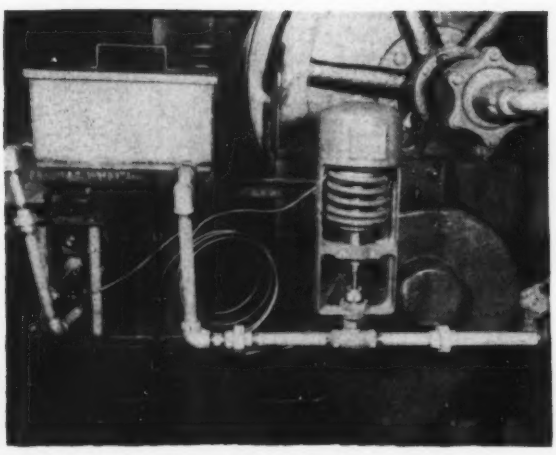
The lightweight constructions being made from these yarns lend themselves to Avcoset fabrics [And possibly other stabilization processes.—Editor] because fabric hand from the loom can thus be maintained while crease resistance and washability are added.

On heavy fabrics, resin treatments have found favor because garments from such fabrics are usually dry-cleaned. Since most resins are not permanently combined with the fibers, they are removed by repeated washings. So coarse deniers, which don't wash out, can improve fabric hand permanently.

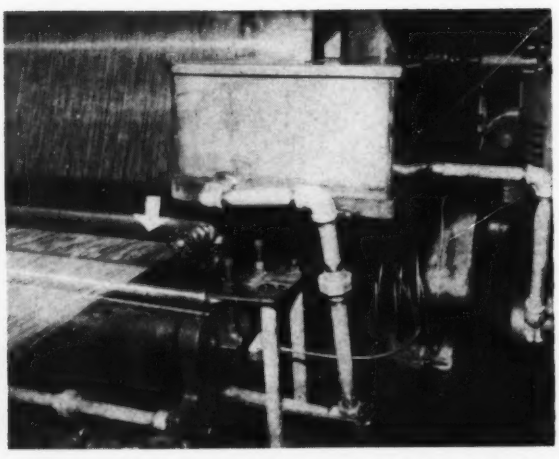


STAINLESS-STEEL ROLLER adds 1% wax, by weight, to slashed nylon and Dacron yarns after they come off the No. 7 drying cylinder. The wax is self-drying.

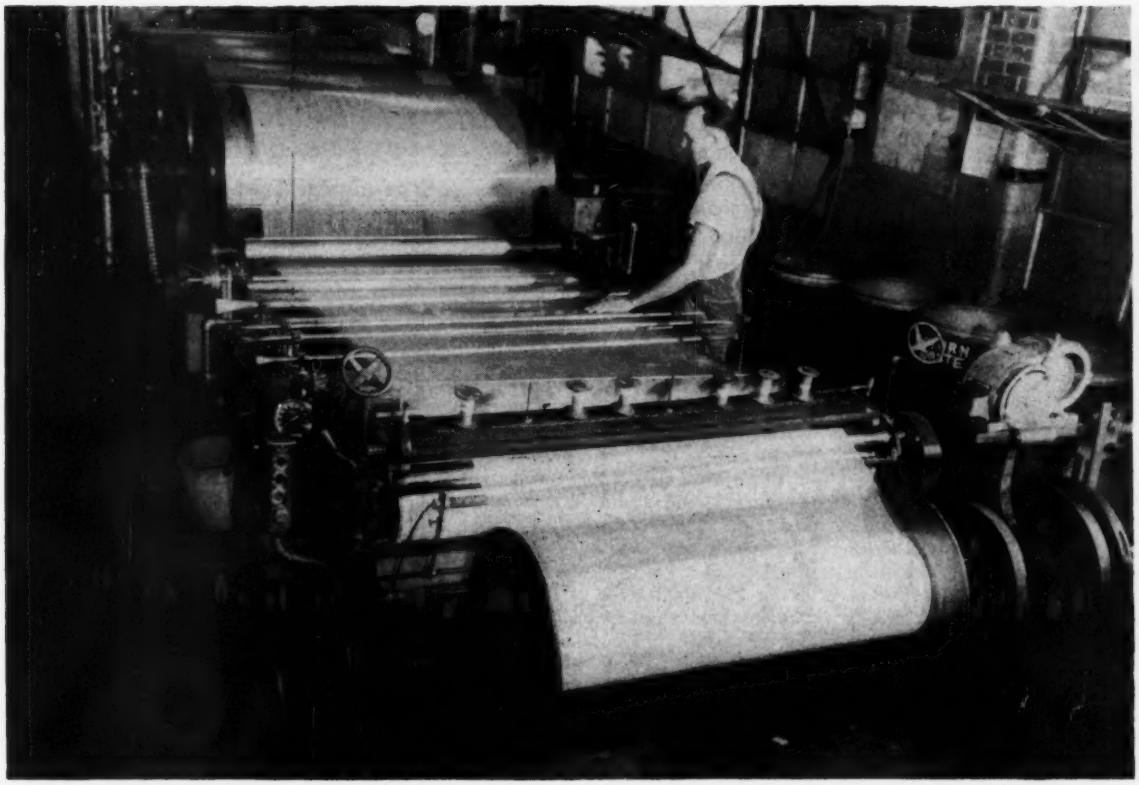
Are You Missing a Bet By Not **Overwaxing Warps?**



THERMOSTAT is connected to a ½-in. steam line joining the main line from the slasher cylinders. The melted wax in the stainless-steel reservoir is held at 155° F.



MELTED WAX in the reservoir is fed manually into the trough where a 3-in.-dia. stainless-steel roller turns. Yarns have ¼-in. drag on the roller.



OVERWAXING high-twist nylon, without slashing, is being done here by John Dixon. Warp yarns are threaded around the cold drying cylinders to keep ends from snarling.

▶ Cheraw Weaving Mill is adding a melted, water-soluble wax to sized nylon and Dacron warps at the slasher.

• Weave-room production has been raised 1½%

• Cost for waxing a 3,000-yd. Dacron warp is only $1.66

• Experiments are being made waxing warps without sizing

By RICHARD B. PRESSLEY
Associate Editor, TEXTILE WORLD

WEAVE-ROOM PRODUCTION has been increased 1½% at The Cheraw Weaving Mill, Inc., subsidiary of Martin Weiner Co., Cheraw, S. C., by overwaxing slashed warps.

Filament nylons and Dacrons are being woven. Most fabrics are made from 30-, 40-, and 50-den. nylon and 40- to 75-den. Dacron.

Overwaxing, as practiced by Cheraw Weaving Mill, is the addition of a water-soluble melted wax to the sized warp between the last drying cylinder and the split rods of the slasher.

The purpose of overwaxing nylons and Dacrons is to lubricate the sized yarn to make it more pliable and to coat the yarn evenly so that all breaks in the dried size are sealed.

To overwax yarns, Cheraw Weaving uses the Lubekote process and applicator developed by Chemical Processing Co.

The applicator consists of a Taylor thermostat connected to an extension of the main steam line of the slasher, a melting-pot reservoir, a stainless-steel roller the full width of the warp yarns, and a trough to apply wax to the roller.

The roller is turned by link-type V-belts driven from the shaft of the No. 7 cylinder of the slasher. A 25-to-1 speed reducer slows the speed of the roller to only a few turns per minute.

The cost of the complete applicator, delivered but not installed, was $422.

The Johnson slasher has seven cylinders, is equipped with Foxboro controls, and operates at 40 yds. per min. on nylon and Dacron yarns. With overwaxing, the sizing formulas have not been changed. The slasher speed and cylinder temperatures also remain the same.

Cylinder temperatures for nylon yarns are No. 1, 130° F; No. 2, 170° F.; No. 3, 190° F.; Nos. 4, 5, and 6, 200° F.; and No. 7, cold. Size-box temperature is 140° F.

Cylinder temperatures are the same when Dacron yarns are slashed and overwaxed except that No. 7 cylinder is run at 200° F.

Six section beams are usually used.

CONTINUED ON PAGE 268

Tips on Blending **Cotton** and **Nylon**

▶ Low percentages (15 to 30%) of nylon can be blended satisfactorily with cotton at several processing points. For most products, 3.0-den., 1⅛-in. nylon should be used. Some machine settings may need changing if 1½-in. staple is used.

By J. R. JONES, E. I. du Pont de Nemours & Co., Inc.

IN BLENDING COTTON and low percentages (15 to 30%) of nylon, conventional cotton equipment is most effective with semidull nylon in 3.0- and 1.5-den., 1⅛- and 1½-in. staple. Machine settings do not have to be changed for 1⅛-in. staple, but a few changes are necessary for best results with the 1½-in. staple, carded or combed.

Although the 1.5-den. nylon is nearer the fineness of cotton than the 3.0-den., the coarser nylon staple can be carded and combed better.

In one instance, a blend of 75% cotton and 25% 3.0-den. nylon was carded at the rate used for cotton. When 1.5-den. nylon was used in the blend instead of the 3.0-den., carding rate had to be reduced 50%.

In another instance, a blend of 80% cotton and 20% 3.0-den. nylon in both 1⅛-in. and 1½-in. staple lengths was combed successfully; but when 1.5-den. nylon was used, the sliver was too bulky.

Unless the end product requires the use of 1.5-den. nylon in blends with cotton, 3.0-den. should be used, because of better processing results.

Where Blending Can Be Done

Nylon can be introduced into the blend before opening, before picking, or in drawing. Blending before opening or before picking insures more-even distribution of the fibers in the blend. In making a combed yarn, however, it may be desirable to blend after combing to avoid processing the nylon through the combs. Nylon usually requires no combing.

Most mills prefer to run cotton-nylon blends with the same settings used for cotton. There have been indications, however, that by making minor modifications at selected points in the process, improved efficiencies, reduced nylon waste, and better yarns may be realized.

These advantages must be balanced against the degree of flexibility desired by the mill. Use of lower twist multipliers in roving and spinning has been found desirable to correct for the slightly altered drafting characteristics of the cotton-nylon blend in comparison with 100% cotton. Slashing and weaving have been accomplished with normal cotton techniques, but some mills have made modifications to their slasher formulas to improve weaving efficiency and fabric quality.

Some methods of blending that have proved satisfactory are:

Blending on Opening Feeders

Until recently, blending cotton and nylon on opening feeders was not practical because of difficulties involved in measuring the cotton and nylon fiber on typical opening feeders, the possibility of overworking the nylon in opening, and the necessity for blowing the blended stock through ducts from the opening room to the picker room.

However, the results of one experiment demonstrated that this method of blending is not only feasible but very practical. This method requires close attention to the calibration of the feeders and careful examination of stock severely opened to determine if the nylon has been overworked. In all cases, this method should be checked by a pilot sample before it is adopted by a mill.

In the test mentioned, 11 feeders charged virgin cotton to the opening equipment at a total rate of 33½ lbs. per min. One feeder charged virgin nylon to the opening equipment at a rate of 5 lbs. per min. Therefore, stock containing approximately 13% nylon was charged to the system.

The cotton-nylon stock was opened by vertical and lattice openers and then blown to the picker room through ducts. The nylon content of card sliver produced from this stock did not vary more than 1%.

Sandwich Blend

A uniform blend can be made by the sandwich method. Opened cotton and virgin nylon are laid down in alternate layers, and vertical sections of the lay-down are fed to the picker hopper.

Lap Blending on the Finisher Picker

When the cotton contains excessive trash or foreign materials, it may be desirable to thoroughly clean it before blending to avoid the problem of excessive mixed waste. In this case, it is necessary to produce 100%-nylon laps, which frequently requires the use of a two-beater synthetics-type picker.

After the cotton and nylon are processed separately through a breaker picker, the blend can be made on the finisher picker by using individual laps of cotton and nylon stock.

Stock Blending on the Finisher Picker

In instances where the nylon has been stock dyed, it is possible to avoid making 100%-nylon laps on the breaker picker. After the cotton is processed separately into breaker-picker laps, the blend can be accomplished on the finisher picker by creeling the cotton laps and feeding nylon stock to the finisher-picker apron at a rate to establish the proper blend.

Mechanical Blenders

Several blenders have been successfully used to blend cotton and nylon. With this equipment, virgin nylon and virgin or opened cotton are charged to the feeder hoppers and fed in weighed proportions on a conveyor in such a manner as to produce a sandwich-type blend. The blend is carried on the conveyor to a beater that opens and cleans the stock. Finally, the stock is blown through a duct to a storage bin, from which it is fed manually to the picker feeder or fed by duct directly to the picker.

Blending at the Drawing Frame

If the uniformity of the blend is a secondary consideration, it is more economical in many cases to blend cotton sliver and nylon sliver at the drawing frame. This method reduces the amount of mixed waste normally obtained in the opening and cleaning operations.

However, blending card or combed sliver and nylon card sliver on the drawing frame results in a nylon-core breaker-drawing sliver. Since the breaker drawing frame drafts

the cotton and nylon essentially as two separate slivers, with the nylon taut and the cotton slack, the sliver is deposited in the can in a cabled form, with the cotton wrapped around the nylon. This condition frequently results in increased piece-ups and occasionally requires additional care in handling the sliver cans.

It is possible to minimize this condition by careful placement of the nylon sliver in the sliver bundle creeled into the breaker drawing frame and by using cotton and nylon slivers of approximately the same weight.

For example, if there were six ends up at the drawing frame, two of which were nylon, the ends should be arranged in this order: cotton, nylon, cotton, cotton, nylon, cotton.

Also, reducing the web tension to minimize the contraction of the nylon has been helpful in some mills. However, improvement by this means is limited because the cotton portion of the web sags before the nylon tension can be reduced appreciably.

Points To Remember

Finish Addition

Where it is necessary to add finish to either component of the blend, the addition should be made to that fiber before blending to achieve proper application and dispersion and to minimize the effects of finish interaction.

Use of Air Ducts

Many blending units in use by cotton spinners were designed for tangled, unopened, dirty stock and are not satisfactory for 100%-nylon staple. Moving nylon staple through air ducts tangles the nylon; and the tangles cause neppiness, poor processing, and poor-quality yarns. Therefore, before cotton-nylon stock is transported through ducts on a production basis, a pilot sample should be evaluated to determine if the nylon has been tangled.

Fiber Damage at Picker and Card

Fiber damage usually occurs at the picker and card by having the picker beater set too close to the feed rolls and the card feed plate too close to the lickerin. The nylon fibers can be processed with fairly close settings, but the cotton fibers require more open settings at the picker and card.

Blend Distribution

Chemical analysis and microscopic cross sections show generally good distribution of the nylon and cotton fibers in the card and drawing sliver. Sliver split lengthwise shows that each half has approximately the same percent of nylon. Results of different sections of sliver also show that the fibers are well distributed.

Some Settings Are Changed

Picking and Carding

Standard cotton pickers, either single-process or two-process, have produced acceptable cotton-nylon laps without picker modifications. Generally speaking, the beater mote is rich in nylon content; but the total loss of nylon in picking is small.

On the picker and the card, the objective is to obtain maximum cleaning of cotton without losing nylon or cotton fibers. Some degree of control can be obtained by adjusting the grid bars of the picker and the mote knives of the card. A greater angle of tilt and closer settings improve cleaning but also increase the amount of material removed. The air currents of the picker appear to be a

CONTINUED ON PAGE 246

Teflon—
Du Pont's New Fiber

▶ Important properties—strength, resistance to chemicals and high temperatures

▶ Main fabric uses—filtration, laundry, belting, and tapes

DU PONT HAS TAKEN THE WRAPS OFF Teflon, its new fiber, and told what the fiber is and what it will do.

Described as a tetrafluoroethylene fiber, Teflon is said to have good mechanical strength and good resistance to high temperatures and chemicals. In fabric form, it probably will find uses in filtration fabrics for liquids and gases; laundry fabrics for pads, press covers, and roll covers; conveyor and other belting; and electrical tapes. In yarn form, it may be useful as sewing thread for certain applications.

As a plastic, Teflon is already being used in the textile industry as a coating on surfaces to prevent yarn, fly, size, dirt, and other matter from sticking to the surfaces. It is also used to impregnate glass fabrics and tapes.

At present, Teflon is produced only in 60-filament, 400-den. continuous-filament yarn in 1-lb. cones for experimental work. No staple fiber is being produced yet.

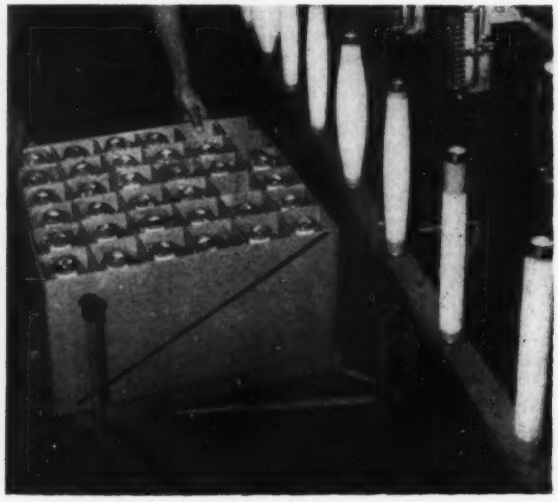
The fiber is tan to brown in color and can be bleached white in a strong oxidizing mineral acid, but its dyeability is very poor.

Its two most important characteristics are its resistance to heat and chemicals. Strength is not affected up to temperatures of 400° F. and in some applications up to 500° F. It is unaffected by all chemicals except fluorine gas and chlorine trifluoride at high temperature and pressure and by molten-alkali metals.

Here Are Teflon's Properties

Denier per filament	5.0 (present production is 6.67)
Specific gravity	2.3
Strength	
Tensile	
Grams per denier	1.45
Pounds per square inch	42,700
Wet	Same as dry
Loop	80.8% of tensile strength
Knot	78% of tensile strength
Elongation	21.2% at break
Temperatures	
Zero-strength	590° F.
Gel	621° F.
Decomposition	750° F.
Useful range	400 to 525° F.
Flammability	Nonflammable, but melts at 750° F.
Moisture absorption	Zero
Adhesiveness	Slippery
Cross section	Round
Diameter	$\sqrt{\text{denier}} \times 0.309$
Shrinkage	Moderate initial shrinkage on exposure to high temperatures

MERGE CHECK is made for all new shipments. About 50 pirns, selected by a controlled randomization, are checked from each merge. A proportional amount of break and no-break yarn is selected to make the check representative of the shipment. The number of breaks and causes are recorded on the slips. This gives a record to check against the knot frequency in coning.



VIRGIN PIRNS are supplied to the redrawing machines by this carton-supply system. The carton is wheeled in on a U-shaped frame dolly and then slid onto the swiveled supply rack that swings out into the aisle. Several racks are in place under each machine. With this system, the cellophane wrapping protects the pirns until the package is on the machine.

How Jefferson Mills

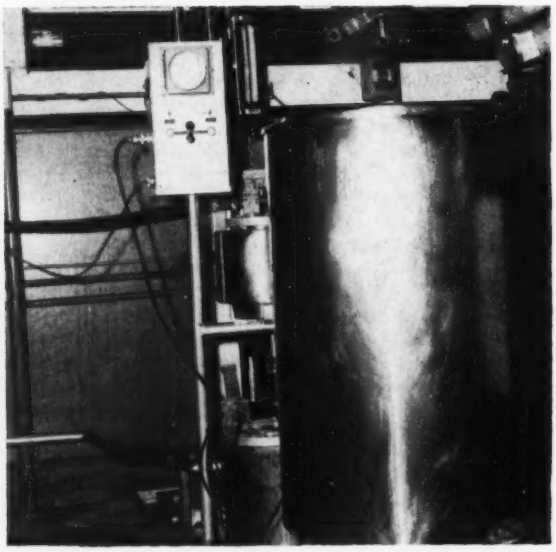
Throws Tricot Yarns

By **THOMAS B. WINSTON,** Assistant Editor, TEXTILE WORLD

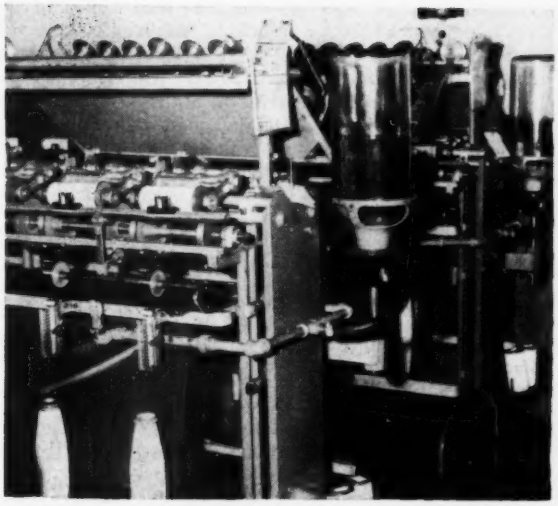
▶ Features of tricot-yarn throwing at Jefferson Mills include:

- Merge checks
- Compensating tension gates
- Transfer oil rolls
- Low-temperature conditioning
- Conveyor handling in coning room

SIZING is essential for second-grade tricot yarn. It minimizes broken filaments and gives a better stitch. Slightly under 0.5% of size is put on the second-grade yarn. Distilled water is used for making size; the size supply to the trough is controlled by a simple wier cup, which, if kept full, meters the correct flow.



SIZE-FEED SYSTEM has a visible viscometer reading, red-and-green-light control indicators, and easily removed pump and motor for quick servicing.



REDRAWING has been improved with two Jefferson-developed devices. Oiling is controlled by a transfer roll with an incut surface, which gives a precise measure of the oil film. The small transfer roll works from the regular rolls running in the oil trough. Tension control has been improved with a self-regulating, compensating tension gate that allows for variations in supply density.

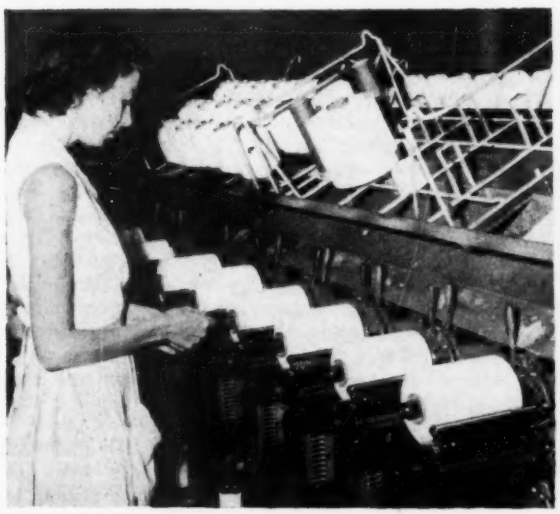
HEADLESS-PACKAGE UPTWISTERS give the best control of tension and minimum yarn damage. Besides these Type TP U. S. Textile machines, Jefferson has some older Atwood uptwisters that were converted to a headless package. Package size is selected for the best balloon effect: an 8-oz. package for 20-den. yarn, 12-oz. for 30-den., and 1¼-lb. for 40-den. and larger.

THE ENGINEERING APPROACH is the guide to action at Jefferson Mills (a division of Kahn and Feldman), Pulaski, Va. "Yarn, equipment, and people are the ingredients in a plant," says E. G. Hill, plant manager, "and we try to find engineering principles to apply to every problem."

For instance, to keep check on the effectiveness of processing, the yarn is checked as it comes in and then rechecked after processing. Merge checks provide a knowledge of the raw yarn; and a record is kept of the number and causes of breaks. Against this knowledge of the raw yarn, knot frequencies in coning and checks against inspection standards have meaning. If the final quality is in line with raw-yarn quality, the processing is under control.

Pirns for the merge check are randomly selected according to a statistical plan; usually 50 pirns, divided between break and no-break yarn to make the check representative of the shipment, are selected from a shipment.

Jefferson uses heavy Sonoco paper tubes covered with parchment, colored to identify the yarn, as a surface for winding. A 3-lb. tube is wound for all yarns except 20 den. The Universal No. 50 winders are set up to make a core-



TRICOT 3-LB. PACKAGES are wound on parchment-covered, heavy Sonoco paper tubes. The parchment comes in several colors for yarn identification. Universal slub catchers are used on the No. 50 winders. Clean yarn, rewound on paper tubes with proper transfer tails, keeps tricot warping cost low.

DENSOMETER is attached to a spring-loaded line to keep it at the table where doubtful tubes are checked. Harry Bratton, shift supervisor, demonstrates how it works. "Little problems like this," says E. G. Hill, plant manager, "are sometimes the hardest to solve. Here we've eliminated reminders not to carry off the Densometer."

CONVEYOR SYSTEM converges on the inspection and wrapping table, one conveyor from the machine aisle and one conveyor from along the wall. The wrapped packages are put in Jefferson Tray-Packs (used to ship hosiery yarn) for the trip down the conveyor to the packing room, where they are transferred to heavy cartons.

CARTON CHECKS are made on three cartons a day from the packing room to check general inspection standards on knots, cross-winds, weight, etc. The wrapping is left untucked on one end so the yarn will not scrape against a badly wrinkled wrapping when the package is removed. A Seriplane is also used in the inspection check. James Hughes and Don Hall examine a doubtful tube.

type transfer, and they are equipped with Universal slub catchers, which have a precision adjustment down to 0.0025 in. to take out the larger mill-caused defects and smaller defects that become magnified during processing.

Generally speaking, 20-den. nylon is Jefferson's most difficult yarn to run. Machine conditions have to be doubly inspected, and final winding requires extra care. The package size is important, and a 2-lb. package has been found to be best. The 20-den. yarn runs better on tubes than on cones; with cones, some filament damage is almost always present. Tubes are better for this yarn because the relationship of the peripheral speeds of the pressure roller and the tube results in less damage to filaments than the speed relationship when cones are used.

Precision Redrawing

The supply packages for redrawing are kept wrapped until they are put on the machine to keep them protected as long as possible. The packages are taken directly from the shipping cartons, which are kept under the redrawing machines on a retractable rack. U-shaped frame dollies are used to bring in the cartons.

Differences in supply tension are compensated for by special self-adjusting, counterweighted tension gates developed at Jefferson. The improved gates are assembled in Jefferson's machine shop.

A small oil-transfer roll with an incut surface that measures the oil film picks up oil from standard oiling rolls running in the oil trough. The transfer rolls are also assembled in Jefferson's machine shop.

Air conditioning is another essential for good tricot throwing. Jefferson has seven separate air-conditioning plants. The atmosphere is maintained at 62% r.h., 82° F. in the rewinding and uptwisting rooms and 66% r.h., 82° F. in the coning room. One problem in connection with the plants was an excess power load created when more than one motor in the larger units cut in at the same time. To avoid overloading, Jefferson installed time-delay relays that prevent more than one motor starting at a time.

Uptwisting equipment includes new Type TP U. S. Textile headless-package machines and older Atwood uptwisters that were completely rebuilt and changed to a headless-package take-up. Take-up arbors made with $\frac{1}{8}$-in. anodyzed aluminum are assembled in Jefferson's machine shop; the advantage of assembling is a better-quality arbor rather than cost reduction.

In yarn conditioning, several methods of controlling time, temperature, and wet-bulb variables to get a high degree of twist stability are used. Generally, the yarn is reduced from about 9% to 6% residual shrinkage. In addition to two low-temperature conditioning processes, Jefferson has two Lydon Bros. steam boxes with Brown pneumatic recorders to control temperature and vapor injection for wet-bulb control.

Sizing is done on all second-grade yarn and on some first-grade yarn for top-quality tricot mills. The people at Jefferson think that sizing is essential for second-grade yarn to minimize broken filaments and produce a yarn that gives a better knit. Slightly below $\frac{1}{2}$% of size is put on.

Softened water prepared by an ion-exchange unit is used for size manufacture. In addition, Jefferson has Zeolite equipment for processing its water for general use.

The third element in tricot throwing is people. Jefferson works closely with the Virginia State Employment Office to get the right people for the right job. Aptitude tests were developed by the employment office with test results of Jefferson operators used as standards, and turnover has been substantially reduced. The board approach, with several people looking over the candidate, is used in addition to tests in selecting supervisory personnel.

Tinting Fibers Is a Pain in the Neck

But you can minimize tinting troubles if you—

- **Check fugitivity under plant conditions**
- **Use the minimum amount of tint**
- **Use the most concentrated dispersions possible**
- **Make sure powdered tints are completely dissolved**
- **Use low temperatures and humidities in steaming**
- **Scour fabric at lowest possible temperatures**

By E. A. MURRAY, Chemical Engineer

IDENTIFYING fibers in process used to be fairly simple. For rayon there were wool dyestuffs, for wool there were rayon dyestuffs, and nobody bothered to tint cotton. It had been learned by bitter experience that a wool dye wasn't necessarily fugitive on rayon, and vice versa; also, that steaming had a pronounced tendency to set certain colors. Tints, or "sighting colors," had to be carefully chosen even then, but the considerable range of available dyes made it fairly easy to select suitable tints for the then-available fibers.

When Problems Multiplied

Since 1938, however, when nylon appeared on the market, tinting problems (and not a few other gray-mill problems as well) have become maddeningly complex. Today it is hard to find a mill that hasn't at least tried some of the synthetic fibers. With the wide range of synthetic fibers available today, tinting is more necessary than ever to prevent mixing of different lots.

Because many of the newer synthetics are difficult to dye, you might think that the tint-selection problem would be a minor one. Not so. Many times, paradoxical as it may seem, the fiber that can't be dyed is also the one that is stained by just about any of the common tinting colors.

Problems of tint selection and application are becoming increasingly difficult to solve. Perhaps the greatest challenge is in blends, where colors must be fugitive when applied to fibers of widely differing chemical type. The need for good tints, readily removable by simple scouring from all fibers, was never more pressing than it is today; and the lack of them was never more evident. Several large mill organizations have been sufficiently concerned over the tinting problem to undertake their own research in the field. These companies, fiber suppliers, and tint manufacturers as well are all looking for a line of colors that are fugitive from all fibers under all conditions.

Why No Universal Tint?

Reference to technical literature reveals very little, other than a few fairly old patents, on tinting. It has been said that most comments on tinting are unprintable. A more likely reason is the relatively small dollar volume of tints sold as compared with colors of a more-permanent nature. Tinting colors are a peanut-stand business for the larger dye manufacturers and, therefore, not a particularly attractive field for extensive research and development.

Since the usual dye problems such as crocking, lightfastness, and gas fading need to be considered in only a minor way, if at all, in developing tinting colors, the problem of finding universally fugitive colors would appear fairly simple to solve. To design a dye molecule, however, that has zero or near-zero affinity for a wide variety of fibers is probably not much easier than to develop a universal dyestuff. The chemical building blocks responsible for color in practically all dyes have some affinity for one or more of the different chemical types among the synthetic fibers available today.

Two Broad Classes of Tints

Many colored materials have been used for tinting, but the two broad classes are water-soluble dyes and water-insoluble pigments.

By far the largest poundage of dyes sold today for tinting are selected colors of the acid type. They are usually supplied as dry powder or as liquid dispersions, the so-called "prepared tints." In prepared form, the colors may be dispersed either in oil or water, depending on the application intended; oil is commonly used in filament-yarn processing and water in tinting of staple fibers. Since many of the acid dyes have little affinity for viscose and cellulose acetate, these colors are excellent tints for both types of rayon. They stain wool and nylon, however, and some synthetics as well; and staining is today a severe limitation.

A few direct dyes have been found useful in tinting wool, and some of the basic colors are good for nylon; but the usefulness of both of these classes is limited by the fact that they generally stain cellulosic fibers and many of the synthetics.

Pigment colors have been widely used for wool tinting, and with good results. Since they are water insoluble and cannot penetrate the fiber, shouldn't pigments be a good bet for universal tints? No. Rather surprisingly, a good many pigments can act as stains; even though they don't dissolve in water and therefore cannot penetrate the fiber like a dye, some of them show surprisingly poor fugitivity. Just when you don't want them around, they suddenly develop a bulldog tenacity and resist scouring, bleaching, and stripping.

Maybe the pigment particles are mechanically trapped in tight fabric constructions; but some pigments, particularly the organic types, have a pronounced affinity for certain types of fibers and stain them badly. The selection of pigments of good general fugitivity is almost as difficult as the problem of finding good water-soluble colors.

Aside from any shortcomings with respect to fugitivity, pigments are also undesirable for other reasons. They have relatively low tinctorial value, which makes for a high tinting cost; and they have a tendency to dust out of the stock during carding and spinning, which creates a cleaning problem and also represents a loss in money value of the color.

Novel Methods Not Promising

The difficulty in finding satisfactory colors has led some mills to experiment with radically different identification methods. Application of colorless chemicals that fluoresce strongly under ultraviolet illumination, radioactive isotopes, and distinctive odors have all been considered.

Both fluorescent chemicals and radioactive isotopes require special equipment for detection and would require a fairly heavy capital investment if stock in process were to be inspected at all stages of manufacturing. The greatest

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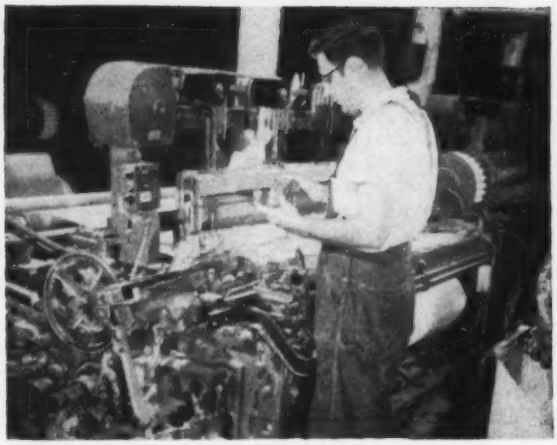


SHUTTLE FUR and eight bristles control the filling on the sateen weave to eliminate kinky filling. Loomfixer Carl Petty has just placed new fur in the shuttle.

WEAVER RUBY POOLE washes with a waterless cleaner. Clean cloth is the most important requirement from weavers and loomfixers after mechanical defects are eliminated from the cloth.

How Beaumont Mills Eases

▶ The spacing of looms, the auxiliary equipment, and the weave-room organization ease many of the problems normally connected with a small weave room

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

NEW XP LOOMS installed to replace old looms in the No. 5 weave room in Spartan Mills' Beaumont plant, Spartanburg, S. C., have been running for several months. Problems usually connected with starting a new weave room have been passed, and the weave room is now running efficiently with only normal day-to-day troubles.

Looms spaced far enough apart for ease of operation are one of the features of the weave room.

Weavers and loomfixers can walk completely around every second loom, and the looms placed end-to-end have a 6-in. space between. This space is adequate to avoid injury to loomfixers while they are holding the lays to check for shuttle boxing.

Weavers' alleys are 20 ins. wide, and warp alleys are wide enough for the 26-in. warp beams to pass through easily without danger of injuring warps in the looms.

Looms Are XP Special

The No. 5 weave room (one weave room in the several at Beaumont containing a total of over 1,100 wide looms) is equipped with 120 Draper XP special looms 60 ins. wide.

The loom is special in that many features were selected by Beaumont to weave fabrics from the lightest construction of sheeting to the heavier constructions of ducks at a high production figure.

For example, all the looms are equipped with two clock-spring top motions and two sets of harness cams. Bartlett let-offs with large-diameter friction drums give the sensitive letting off necessary to weave light sheetings and yet hold heavy constructions of cloth firmly.

Electric warp stop motions are on all looms to insure quick stopping at broken ends on light weaves.

Right now, part of the looms are weaving 58-in. 96x64 sateen weighing 1.21. The filling is 8s. Five harnesses are used. Other looms are running 60-in. 64x64 sheeting weighing 2.10. The filling is 21s. Only two harnesses are used.

The only difference between loom motions is that drag rolls are added to stabilize the warp movement on the heavier sateen weave. The greatest value of the drag rolls is that beam vibration is reduced. As a result, selvage ends are sturdier at the beam heads; and wearing of selvage yarns against the beam heads is eliminated.

Beaumont expects to be able to weave yarns varying from 40s down to ply yarns for ducks with only minor loom changes. The most important change necessary to run plied filling yarns in ducks will be replacing the present shuttles with wider ones to run larger-diameter filling bobbins.

Equipment Promotes Efficiency

Loom speeds at present are 162 ppm. on all styles of cloth.

All harnesses are Drawtex, and warps are drawn on a Barber-Colman drawing-in machine when new patterns are needed. Warps are commonly replaced with a portable tying-in machine.

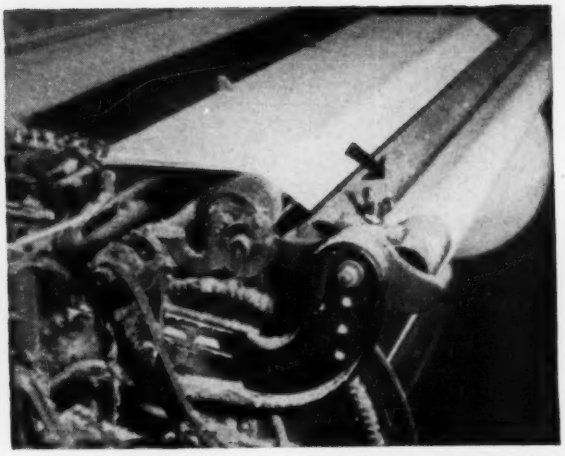
Tape selvages are run on all looms on tape-selvage motions.

Shuttles are lined on both sides with ½-in. Grade A fur. In addition to the fur used in all shuttles, two bristles are used in the shuttles on light sheeting; and eight bristles are used on the sateen fabrics to prevent kinky filling.

Looms are mounted on hardwood floors with lag screws.

One-horsepower Draper-Diehl drives have given no trouble after approximately 18 months of operation. No

LOOM-STOP CARDS are marked by the weavers to show every loom stop on every shift. By checking the cards in their spare time, loomfixers increase production.



DRAG ROLLS added to the heavier sateens reduce the beat-back of the cloth. But they're added mainly to stabilize the selvage ends against the warp-beam heads.

Normal Weave-Room Strain

special attention, such as turning the transmitter gears periodically, is given the drives. The drives operate on 550 v.

Humidification is furnished by three lengthwise rows of atomizers that run the full length of the building. An American Moistening Co. system holds the relative humidity at 84%.

Ten outside exhaust fans of 20-in. dia. are arranged along one lengthwise wall of the building to keep fresh air in the weave room.

The fans are cleaned once each week by an employee under the supervision of the master mechanic. Cleaning is done with rags, steel brushes, and compressed air. The total cleaning time for all 10 fans is 4½ to 5 hrs. per week.

Cleaning Is the Big Problem

Cleaning is the big problem in the weave room because one style of cloth currently being woven must be absolutely free from oil and grease. The looms weaving this cloth are blown off only every two weeks. But these looms are also blown off when warps are out. At warp-outs, the tying-in-machine back man blows off the loom and also greases the harness cams. Harnesses, handrails, and harness straps are cleaned constantly. One batteryhand on each shift has only a portion (16 looms) of a batteryhand's job. During her spare time she regularly and thoroughly cleans the harnesses on four or five looms each day.

Other cleaning is done by a smash hand; there is a smash hand on each shift. Each smash hand cleans the warp stop-motion contact bars on 10 looms each day until she covers one-third the looms in the weave room. Then she starts over the cleaning job again.

Other duties of the smash hand are drawing in break-outs and picking out.

Care in Oiling Aids Cleaning

Loom oiling is also a critical operation in keeping the cloth clean. All oiling is done by one oiler, who works on the first shift. Besides oiling, he cleans the building overhead.

This is the oiler's schedule by days:

Monday

Oil headgears, filling forks, temples, and take-up and let-off motions.

Tuesday

Grease and oil all parts at the back or front of the loom.

Oil several parallels and parallel shoes.

Wednesday

Clean down overhead.

Oil several parallels and parallel shoes.

Thursday

Grease and oil all parts at the back or front of the loom.

Oil several parallels and parallel shoes.

Friday

Clean down overhead.

Empty the loomfixer's scrap boxes.

The weave room containing the 120 looms is under the direction of the general overseer of weaving. Production employees in the weave room are supervised by a second hand on each shift. These 120 looms are about 40% of the second hands' jobs since they have other looms in another nearby weave room to look after.

From an employee standpoint, the number of looms in the weave room is ideal for high-quality cloth and high loom efficiency.

The employee layout for each of three shifts is this:

Two loomfixers have 60 looms each.

Three weavers have 40 looms each.

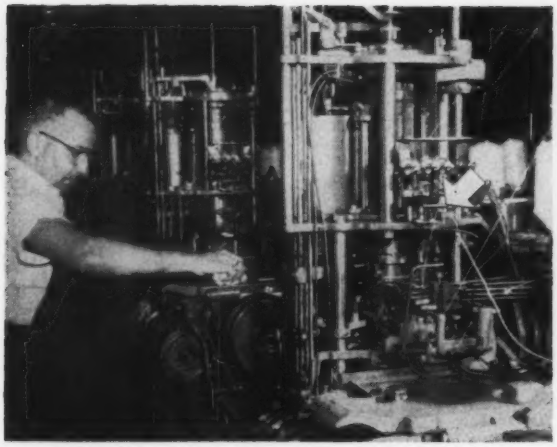
Three batteryhands have 104 looms to service between them. The layouts aren't evenly divided because filling-yarn numbers are 8s and 21s. The fourth batteryhand has 16 looms and, in addition, cleans harnesses.

Two cloth doffers doff cloth on 60 looms each, haul filling and remove empty bobbins, sweep, and take care of all bad or dirty filling.

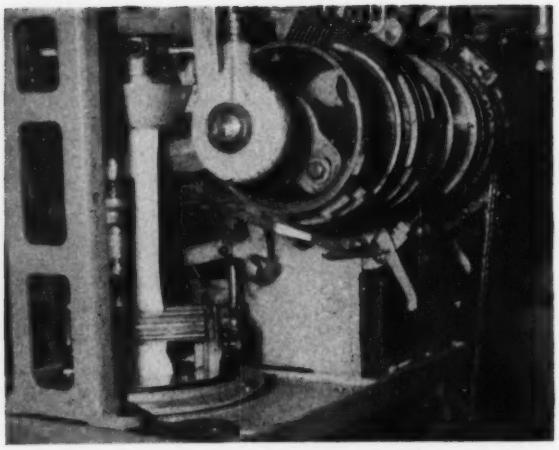
There is one oiler on the first shift.

Because of the compact layout of the weave-room building and employees' jobs, the weave-room efficiency is high for the exact cloth-grading conditions required. All sateen fabrics are graded on both the back and front.

Weave room production is slightly above 90%. Second-quality cloth runs around 6% on sheeting and averages 3% on sateens.



STOP MOTION (arrow) at heel spring reduces seconds. Cleaning machines twice weekly keeps them in tip-top shape.



OIL CUP under the cylinder helps keep socks and machine clean. Plates on work can prevent oil from staining socks.

Princeton Hosiery Mills, Inc., KNITS TASLAN With Few Seconds

To get superior hosiery from Taslan yarn with less than 2% seconds—

- **Apply more yarn tension during heel knitting**
- **Use nylon pull threads**
- **Preboard at lower temperatures**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

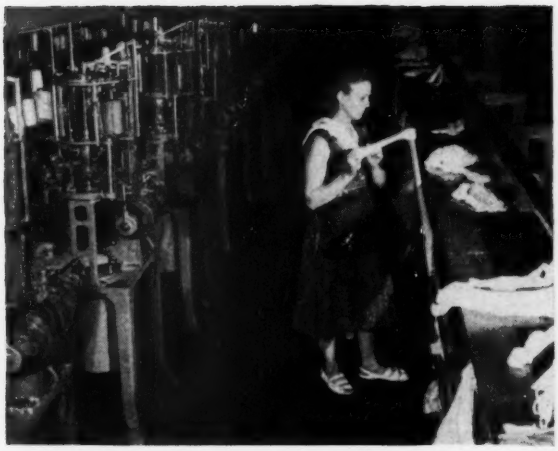
PRINCETON HOSIERY MILLS, INC., Princeton, Ky, has discovered that socks made from Taslan textured yarn have a warm soft hand. When dyed, the socks have a greater brilliance and depth of shade than socks made from other types of nylon yarns. The mill knits women's and children's anklets and boy's socks on Scott & Williams Komets and B-3s.

The Komets are all 48-gauge machines. The Taslan yarn used on these machines is made from two ends of 140-den. nylon. The yarns are twisted 5 tpi. before Taslan processing.

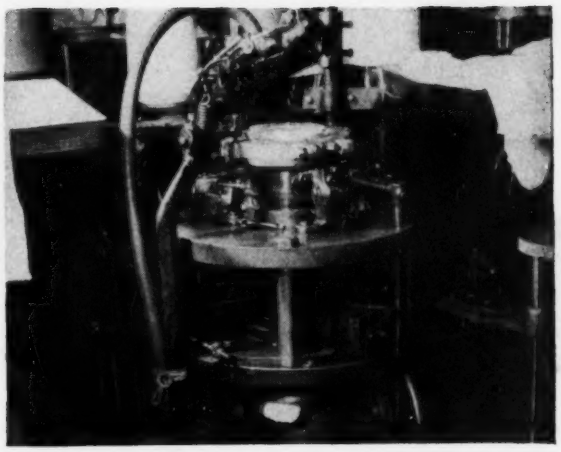
A high-twist nylon filament pull-thread yarn is used

GUARD on looping machine protects the points and keeps glare from looper's eyes. The stocks are laid on the arm of the special seat.

INSPECTING FORM rotates on two ball bearings held in a 2-in. T piece screwed to a flange on a wooden bracket.



WIDE ALLEY and good lighting make for pleasant working conditions. Baseball bat screwed to bench assists turning.



AIR PIPE supplies an air blast to the sock at the start of the leg and the foot to provide a clear, even stitch.

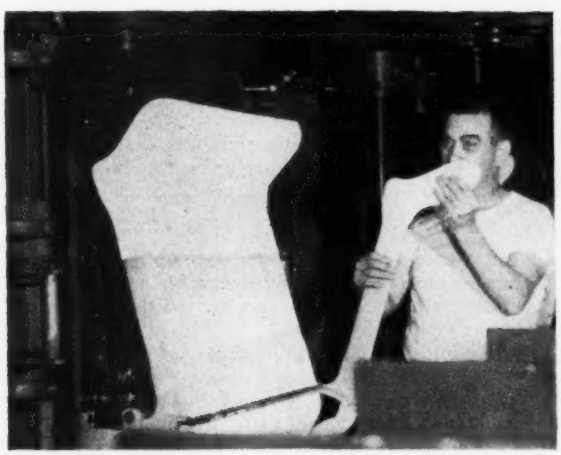
rather than a cotton pull-thread yarn. The nylon yarn eliminates cotton fibers in the welt that may show up as white specks after dyeing.

The small fiber projections in the yarn, caused by the Taslan process, tend to catch on the previous stitch and in the sinkers during heel and toe knitting. To overcome this problem, which caused faulty gores, more tension had to be placed on the heel spring.

Stop Motion Reduces Seconds

A brass rod fixed to the machine frame, level with the heel spring, is insulated and connected to the stop-motion circuit. When the yarn breaks or runs out, the heel spring strikes the rod and the machine stops. This device saves many press-offs and helps to account for the low seconds rate of less than 2%.

Two cleaners also contribute to the low seconds rate. These men keep the 90 Komet machines like new, and they keep the knitting room neat and tidy. The machines are stopped while they are cleaned with a rag and a brush. The cleaners get around to each machine about twice a week.



PREBOARDING is done at 230° F. Marks on the forms and care in the knitting room help get all sock lengths level.

Oil cups, fixed to the sinker-ring retainer, help keep the socks and the machine clean. Plates screwed to the top of the work can prevent oil from dripping on the socks. Oil-soaked socks at Princeton are very rare because only a small amount of oil is used on the needles each shift.

To provide adequate lighting on the knitting machines, a fluorescent fixture with two 40-watt tubes is hung above each machine just 6 ft. from the floor.

Knitters turn and inspect each sock when the pull thread is withdrawn. Baseball bats screwed to the bench, which runs down the center of the knitting room, assist in turning the socks. A sock is drawn down over the handle of the bat, and the welt is gripped with both hands and rapidly pulled upward. One dozen socks are placed in a bag and sent to the looping department.

Air Blast Helps Knitting

Bobby sox, with a 2x2 rib, are made from Taslan yarn on B-3 machines. An air blast helps give a good clear stitch at the start of the leg and at the end of the heel. The blast is operated from two cams screwed to the inside of the back pattern drum.

A pipe with 60 lbs. air pressure runs over the drive shaft. A 1-in. rubber hose is connected to a stop valve fixed to the machine frame near the pattern drum. From the stop valve the hose travels to the transfer cap. After transferring the cuff to the needles, the knitter twists the cuff as she pushes it down between the cylinder.

No special difficulties have been met with during the looping of socks made from Taslan yarn.

A guard, devised by the mill, is fitted to each looping machine. It is simply swung down when the looping machine is not in use. When the machine is running, the guard serves as a shield to keep glare and light reflection from the looper's eyes.

A special student's seat makes an ideal looper's chair. The seats are comfortable, and they have a section where the socks are placed when the socks are drawn from the points.

All socks are inspected on hand forms after mending. The form was also made in the mill to make inspecting easier and to allow inspectors to do a better job. The form rotates on two ball bearings fixed in a 2-in. T piece. The T piece is screwed to a flange fixed to a wooden bracket protruding from the bench.

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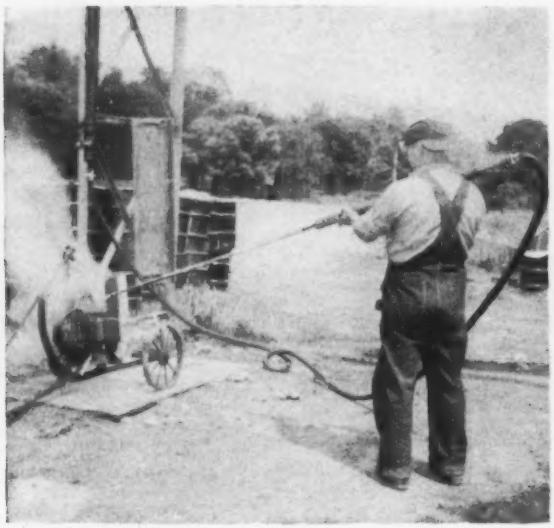


STEAM CLEANING is the first thing that is done to a transmitter when it is serviced. The dolly makes the transmitter easy to move across the dirt surface.

CHAIN HOIST on monorail is used to remove the clean transmitter from the dolly. The transmitter is then pulled along the monorail to the workbench.

How DRAPER-DIEHL DRIVES Are Serviced At Cone Mills

▶ Repairing Draper-Diehl transmitters for several mills in one centrally located electric shop at Cone Mills has resulted in equipment and methods to repair the loom drives easily

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

DRAPER-DIEHL POWER TRANSMITTERS are being serviced at Cone Mills' White Oak plant motor-repair shop quickly and expertly. Special tools, equipment, and a portable workbench have been designed; and an electrician has been trained to repair the drives.

Repairs Follow a Routine

Transmitters from the looms of several Cone Mills' plants in the North Carolina area are all serviced at the White Oak plant under the direction of Cone's engineering department.

The transmitters are brought into the shop from the various plants bolted to wooden skids. One electrician repairs all transmitters and follows a constant plan of operation.

An eyebolt is screwed into the gear-guard mounting hole to lift the transmitter. Then a hoist on a monorail is used to lift the transmitter onto an all-steel dolly with 14-in. wheels. The transmitter is rolled outside the storage area to a nearby steam jenny. Superheated steam at 30 to 40 psi. is used to thoroughly clean the outside of the transmitter.

After being cleaned, the transmitter is rolled back to the hoist and removed from the dolly. Then the hoist and transmitter are pulled along the monorail to a portable workbench in the electric shop. The transmitter is lowered to the workbench top.

The workbench is of welded all-steel construction. A 3-gal. tank of cleaning solution is attached to the front of the workbench. A swing-out storage bin is built into one side, and a piece of plywood with clips for holding special tools is fastened upright to the back top surface.

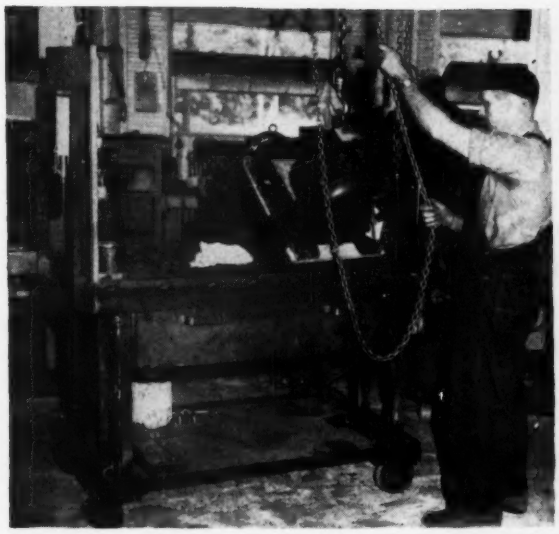
Special Tools Make the Job Easy

The work on tearing down the transmitter follows the procedure outlined in the manufacturer's instruction books, and the job is eased by having all of the tools required within easy reach of the workbench.

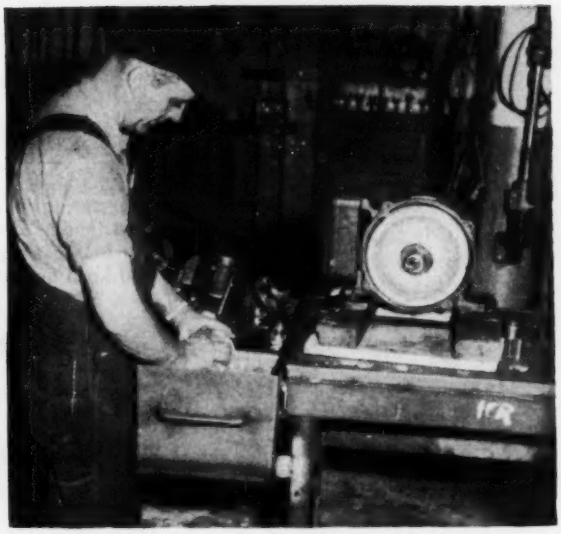
The only departure from the recommended procedure is that the clutch disk is removed; and with the unit partly torn down, power is applied and the rotating element brought up to full speed on the bench. This allows a check of the condition of the bearings supporting the rotating element; and if they are found noisy or rough, the work proceeds until the unit is completely taken apart and these bearings removed for visual and manual inspection.

As parts are removed from the transmitter, they are washed in a 3-gal. tank of Varsol at the end of the workbench. Parts are dried with compressed air and with clean rags.

Bearings are cleaned in a cleaning unit that circulates Varsol through



DISASSEMBLY starts as soon as the transmitter is lowered to the workbench. Electrician Rankin King uses the same routine on every transmitter.



PARTS CLEANING is done in the tank attached to the workbench. Varsol is used to clean the parts, and then they're blown off with compressed air.

a brush, into a tank, and back through a brush. The final cleaning and drying is done with compressed air and clean rags.

On reassembly, the bearings are hand packed with grease and the various fits inspected as the unit is put back together. After the rotating element is assembled, power is again applied to check the bearings. The windings are tested with a megger.

If all tested parts are correct, the unit is test run again.

Because the clutch and brake have been removed from the loom and built into the transmitter, clutch and brake problems are corrected on the repair bench rather than in the weave room.

Weave-room personnel check and maintain four adjustments after the unit is set on the loom:

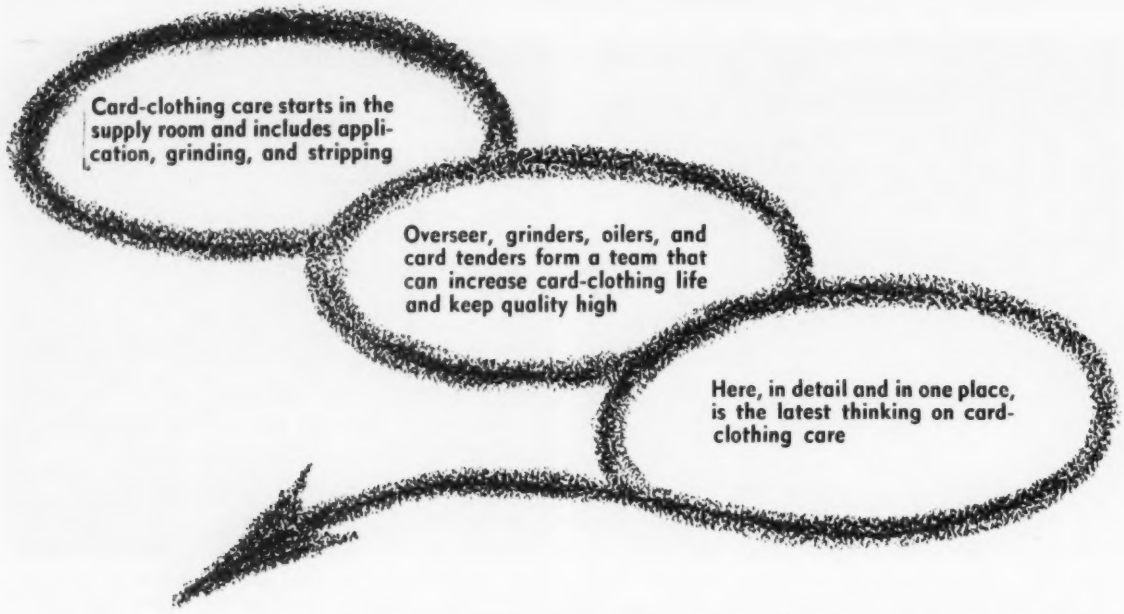
1. The pinion gear is properly meshed.
2. The brake face is spaced to the cork disk.
3. The clutch face is spaced to the cork disk.
4. The tension on the operating spring is set.

These adjustments are very important and, if they are not properly maintained, will cause undue wear on the driving assembly and bearings. Improper line-up of the pinion can cause high shaft stresses due to the amount of power being handled.

The routine maintenance problems of the drive involving the loom clutch and brake, motor shaft and gearing, and motor bearings are all handled by electric-shop personnel. As a result, any pattern of recurring trouble can be quickly recognized and necessary remedies started.

FLOWING VARSOL is used to clean the bearings. The solution is pumped through the brush, it falls into the tank, and then it's pumped back through the brush.

WINDINGS are checked with a megger just before the housing end is put back on. Only three transmitters have been rewound in two years of operation.


Card-clothing care starts in the supply room and includes application, grinding, and stripping
Overseer, grinders, oilers, and card tenders form a team that can increase card-clothing life and keep quality high
Here, in detail and in one place, is the latest thinking on card-clothing care

Take Care of Your CARD CLOTHING

CARD-CLOTHING CARE can be broken down into four distinct categories: storage of clothing, preparation of the card, application, and care after application.

Storing the Clothing

Card clothing should be left in the shipping cases until ready for use. The cases should be stored in a warm, dry place and should be elevated to avoid water damage if the floor becomes flooded. When clothing is required by the card room, the cases should be carefully opened, the clothing to be used should be removed with a great deal of care, and the case should be nailed up again. The clothing should be taken to the card room in its original wrappings, handled very carefully enroute, and allowed to remain in the card room at least 24 hrs. before application.

Whenever possible, each fillet should be unwound in a doffer box and allowed to remain in this loose, open condition long enough to condition itself to room temperature. Probably one-half the cylinder fillets applied are prestretched at 250 lbs. to 275 lbs. tension on a 2-in. fillet. Those who prefer this method claim better seating of wire in the foundation, smoother application requiring less grinding, and fewer raised or blistered cylinder fillets.

Based on remarks made by John M. Reed of Ashworth Bros., Charlotte, N. C., at a meeting of the South Carolina Div., Southern Textile Association, at Ware Shoals, S. C.

People charged with opening cases and handling clothing should be carefully coached and impressed with the fact that the product can be very easily damaged through carelessness and absolutely ruined by contact with any liquid.

Card clothing should never be left to the tender mercies of the curiously idle. They must feel everything they see. Much damage has been done to card clothing by leaving it unguarded and unattended at the mercy of such people.

Preparing the Card

Even more care should be given to the preparation of the card than was given to the handling of clothing. The clothing will run on the card for many years if the card is put into proper condition. To prepare a card for reclothing:

1. Cut out the feed. Strip the cylinder and doffer with a stripping roll. Let the card run free of stock.

2. Stop the card. Remove all waste from under the card, between the frame sides, and inside the flats at the back stand.

3. Replace all worn bearings and shafts on cylinders, doffers, lickerins, and feed rolls. Total wear between shafts and bearings at these member points should not exceed the gauge setting.

4. Line and level the card. The cylinder should be evenly spaced between frame sides, and the doffer should be lined up with the cylinder.

5. Remove all oil-soaked plugs and low plugs. Drive shoe pegs into old tack holes. Finish new plugs even with the cast-iron surface. Don't saw into the surface of the cylinder or doffer. Extreme care should be used in selection of plugs. Each make of card requires a particular size and taper. All selvage plugs should be cut off even with the under side of the cylinder to prevent plugs from being knocked up by chokes in the sides of the card. Raised plugs damage cylinder clothing. Remove screens for inspection and repair and to facilitate applying cylinder clothing.

6. Surface grind cylinders and doffers that are out of round more than 0.005 in. to save undue grinding of fillet wire and to assure good setting and quality work.

By the time the card has been put into condition to receive the fillets, the fillets themselves should have reached the proper condition to be applied to the card (assuming, naturally, that they have been in the card room for 24 hrs. or more, prestretched, or left loose in the box).

Applying the Clothing

Much damage can be done to the card clothing before a pound of production is put through the card. Applying clothing is one of the most tedious jobs in a mill; and the man picked for it should have had years of experience in card maintenance, grinding, and setting before attempting to learn the intricate art of applying clothing. A person with such training has much more respect for

the product he is handling. Proper tools and equipment should also be furnished the clother.

Use the best equipment obtainable. A clothing machine registering not less than 450 lbs. is recommended, preferably one having a positively driven tension head with pony brake. All parts of the machine should be kept in good condition. Step-cone pulleys and tension-box surfaces should be smooth and even. The tension box should be sufficiently wide to accommodate 2-in. clothing without cramping the selvage of the clothing.

Use a driving unit of sufficient capacity to pull on cylinder fillets at a maximum of 450 lbs. on 2-in. and 300 lbs. on 1¼-in. fillet. Once the drawing-on operation is started, the power drive assures even tension and eliminates the stops for rest that men need.

Starting and finishing tapers (1 in. wide, 4 rows of wire for cylinders; ¾ in. wide, 3 rows for doffers) should be applied at 50 lbs. per row of wire.

As the fillet is wound on the cylinder, the clother's helper should be constantly rubbing up the fillet to insure that all wires are firmly seated in the foundation. Stove polish in cake form should be applied to the back of the fillet before or after it is rubbed up. The clother should double check the rubbing up by constantly feeling the crown side of fillet as it is going on.

Nine Don'ts for Carders

Don't give up too many of the old practices. For example, what happened to the bristle brush each grinder used on fillets after grinding?

Don't forget to maintain the tools and equipment used on and around the cards.

Don't let too much oil get on card clothing. This excess oil can come from traverse and drum grinders, comb boxes, cylinder bearings, etc.

Don't forget that a sharp lickerin will remove impurities that a dull lickerin will pass on through the card. Such an unnecessary load on fillets and flats shortens the life of the clothing.

Don't forget that worn feed-roll bushings and shafts cause many a jam by letting the lickerin jerk lumps through.

Don't ever beat back a raised fillet. An inch or two is all right, but anything over that is a pure gamble and actually costs more in labor than redrawing the fillet. Beating back distorts the pitch of the wire, damages the foundation, and precludes redrawing when the fillet raises again, which is the usual result after beating back.

Don't ever grind cylinder, doffer, or flats without first checking carefully for bruises, jams, or other wire damage and correcting. Once a bruise is ground over without having been previously scraped up, you can never scrape the wire up properly. This practice leads to early shedding.

Don't set stripper rolls so deep that you knock wire forward and strip off the top layer of cotton from the foundation.

Don't set the flat-cleaning roll so deep that you strip top cotton from the flat foundation, loosen the wire in the foundation, and ruin the flats forever.

Pack Up Fillet Carefully

Extreme care should be used in packing up fillet as the clothing is being wound on. Each wrap, or layer, should be packed up against each preceding wrap. Do not pack up hard enough to cup the fillet, but do it firmly enough to avoid leaving space between wraps. Should bare iron show between wraps, even though the correct tension is used, the fillet will eventually become loose enough to interfere with settings. A special packing-up tool is available for this purpose.

Cylinder fillets can be drawn on once or drawn on and left overnight to condition. When they are prestretched, draw on at 250 to 275 lbs., remove after conditioning, and draw on again at 400 to 450 lbs.

A word of caution with reference to tension, even in cutting the finishing taper. Any relaxing of tension is never corrected. It creeps back around several wraps of the fillet, and this slack is never taken up. In preparing to cut finishing taper, be sure the fillet is safety tacked sufficiently to hold tension and to permit pulling of the finishing taper at full tension.

All cylinder and doffer fillets should be rubbed up. Even one wire that is not properly seated in the foundation can be the start of a raised or blistered fillet. The other wires in the rib will back out one or two at a time until the three-twill rib or row has backed out entirely. This loosening will continue all the way around the fillet unless caught and corrected.

Someone in authority should impress upon the man who is rubbing up the fillet the extreme importance of this operation, and his work should be checked periodically during the process of applying a fillet.

After the card has been clothed, it should be carefully ground and set up. Poor setting has been responsible for permanent damage to many cylinder fillets, doffer fillets, and flats. Here, too, the person doing the work must know what it is all about and must be well grounded in card maintenance and production.

Setting the Card

To set the doffer to the cylinder, first loosen the nuts holding the doffer bearings. Adjust the nuts on the doffer-adjustment rods to the proper gauge between cylinder and doffer. In setting, turn the doffer in the direction of production rotation and set to the highest point. Always leave the adjusting nuts in the backing-off position. Tighten the doffer-bearing nuts to hold the bearings securely. Recheck the setting.

To set the comb to the doffer, loosen the nuts holding the comb stand and comb box. Make the proper adjustment with the adjusting screws or nuts when the sweep of the comb blade is nearest the doffer. Tighten the nuts holding the comb box and stand, and leave the nuts or screws in the backing-off position after the desired setting is obtained. Recheck the settings.

Card plates are usually warped. The setting can be obtained with paper or tin shims placed under the plate at the settings. For plates sprung away from the middle of the cylinder, place shims between the capscrews and the outside edge of the frame side. For plates sprung into the middle of the cylinder, place shims between the capscrews and the inner edge of frame side. Sprung plates can be trued by peening.

To set the flats, remove five flats so that openings will coincide with the adjusting stands when flats are cranked around. Loosen the jam or clamp screws that affect settings. Set the flats to gauge, and hold the flat down

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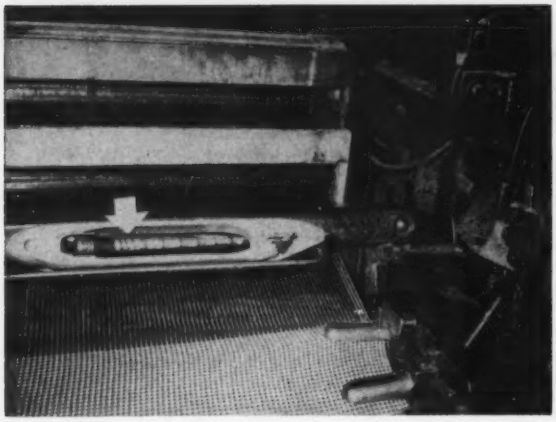
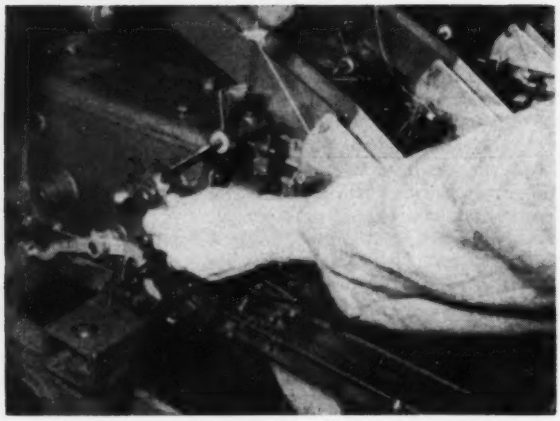


FILLING RESERVE of 4½ picks results in bobbins transferring correctly at the loom.



WINDER ADJUSTMENTS to keep filling reserve constant are made by removing the locking stud and adjusting the outside.

What's the Minimum Filling Reserve On C&K All-Purpose Looms?

▶ A lot of waste goes down the bobbin chute when an empty bobbin is dumped out of a Crompton & Knowles W-loom. How much waste is necessary?

By **EUGENE P. SCHREMP,** Consulting Editor, TEXTILE WORLD

CHECKING RESERVE is a part of every winder operator's job. Each spindle should be checked at the start of each shift to insure the 4½ minimum picks.

THE NUMBER OF YARDS of filling reserve left on the bobbins of Crompton & Knowles all-purpose looms often looks excessive. But cutting down on the filling reserve can cause trouble resulting in broken picks, filling run-outs, and jerk-backs.

For 4x1-Box Operation

With 4x1-box operation, you need a filling reserve of 4½ picks. On 72-in. cloth width at the reed, for example, you need 9 yds. of reserve filling on your bobbins.

Since the filling feeler indicates on the magazine end of the loom, the shuttle must travel to the head end of the loom and back before the magazine transfers the bobbin. Consequently, two picks of filling are used. When the filling transfer is made, there is approximately 2½ picks of filling left on the transferred bobbin as it falls into the bobbin container.

Two and one-half picks, or 5 yds. of filling, seem to be an excessive amount of waste until you consider that all the bobbins do not run out at the exact time the shuttle is picked to the magazine end of the loom. Part of the bobbins will have only a few picks of yarn left, and the feeler will not indicate.

When fewer picks than the minimum of 4½ are left on the bobbins, the shuttle must travel to the head end and back before a transfer occurs. This travel uses two picks of the 4½ picks before the feeler indication is made. Then two more picks of the reserve filling are used. At the time of the transfer, there is about one-half pick of reserve filling still left on the bobbin. This reserve is important to prevent broken picks that result from run-outs.

Too little reserve filling may also leave the loose end of the filling in the shuttle eye and cause the filling end to be woven into the cloth as a drag-in or double pick.

Loom production cannot be maintained at a high level unless there is sufficient reserve of filling on the bobbins, because filling run-outs cause looms to stop; then the weaver has to change the filling manually and restart the loom.

For 4x2-Box Operation

When the loom is changed to operate as a 4x2 loom using three shuttles for mixing the filling, a 4½-pick reserve is still necessary.

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Getting the Most From Your COTS

► **Initial selection is most important, and roll surfaces should be thoroughly cleaned**

► **Buff at slow speed, and rebuff lightly and frequently**

FIRST AND FOREMOST, you've got to have the proper type of cot for your job. Points to be considered include: fiber being run, type of frame, type of clearers, eyebrowing, lapping, ends down, and quality desired.

Assuming that you have chosen the best cots possible, let's look at your roll shop. Roll surfaces should be clean and free from oil, grease, and glue from previous cots. Normally, rolls are boiled with a suitable cleaning agent to remove these impurities. On some of the new antifriction rolls, the manufacturer's instructions must be followed to clean the roll boss or shell surface before new cots are applied.

Air should be used in the assembly of the cots on the solid roll or shell. Air expands the cot to make it slide on the roll easier and stops the roll from pushing all the adhesive out of the cot. Normally, in each box of cots there is a sheet of manufacturer's instructions for applying cots.

Cots should be ordered with the proper hole size; in some instances slipping cots can be attributed to large size. In the manufacture of cots, a tolerance is allowed to insure a tight fit; if your rolls are a few thousandths under size, you might need the next smaller cot.

Buffing and Rebuffing

Next, check the buffing machine. Proper equipment in good repair is a necessity for good buffing. A wide-face abrasive wheel, either 60 or 80 grit, with a constant surface speed and uniform traverse speed, gives proper buffing. A slow, uniform traverse speed obtained with an automatic traverse gives better buffing. The roll coverer should be trained by your cot service man in aligning the top carriage of the buffing machine and checking to see that centers or chucks are running true.

The importance of the buffing machine to quality production cannot be overemphasized. What other machine in your mill directly affects the stock being processed as much? Every roll goes to the buffing machine, and you should give the roll shop the attention and importance it plays in your mill.

Now consider rebuffing. In most mills, rolls are sent for rebuffing on the scheduled time for cleaning steel rolls. Usually one of two methods is used to prevent excessive buffing of cots.

1. All rolls from one frame, together with any extra rolls of the same diameter, are sent to the roll shop for rebuffing to the next smaller outside diameter. It is the duty of someone in the spinning room to see that all rolls are about the same outside diameter in each box.

2. Someone in the roll shop sizes all rolls before setting the buffing machine for rebuffing. Rolls of various diameters can be put into different boxes, and then each size is rebuffed just enough to give a new surface to the cot. Rolls are returned to the spinning room when enough of one size for a frame, plus a few spares to replace any that may become damaged, are finished. The extra rolls are usually put in a rack near the frame or on top of the frame.

Keep a Frame of Spares

Maybe either of these two methods requires an extra frame or two of rolls, but most mills have enough spare rolls to enable them to use one of these systems. A definite system will prevent the waste of cot material in excessive buffing. A tag can be placed on each frame showing when the rolls were buffed and when they are scheduled to be rebuffed. Most cot manufacturers furnish these tags as part of their service.

On shell-type rolls for the card room or on the new antifriction rolls for spinning, the two shells on each mandrel or arbor should be buffed to the same outside diameter. To assure this, some mills have the roll shop wrap each two shells in paper; then there can be no mistake. Other mills use one tote box for each frame, with all shells in the box of the same diameter. Still others have the fixer check the two shells with a roll gauge before putting them in the frame. Any of these procedures is satisfactory if carried out properly. Shells or solid rolls buffed and stored for any length of time should be stored on end, not flat, in the tote box or rack.

Why Rebuff Frequently?

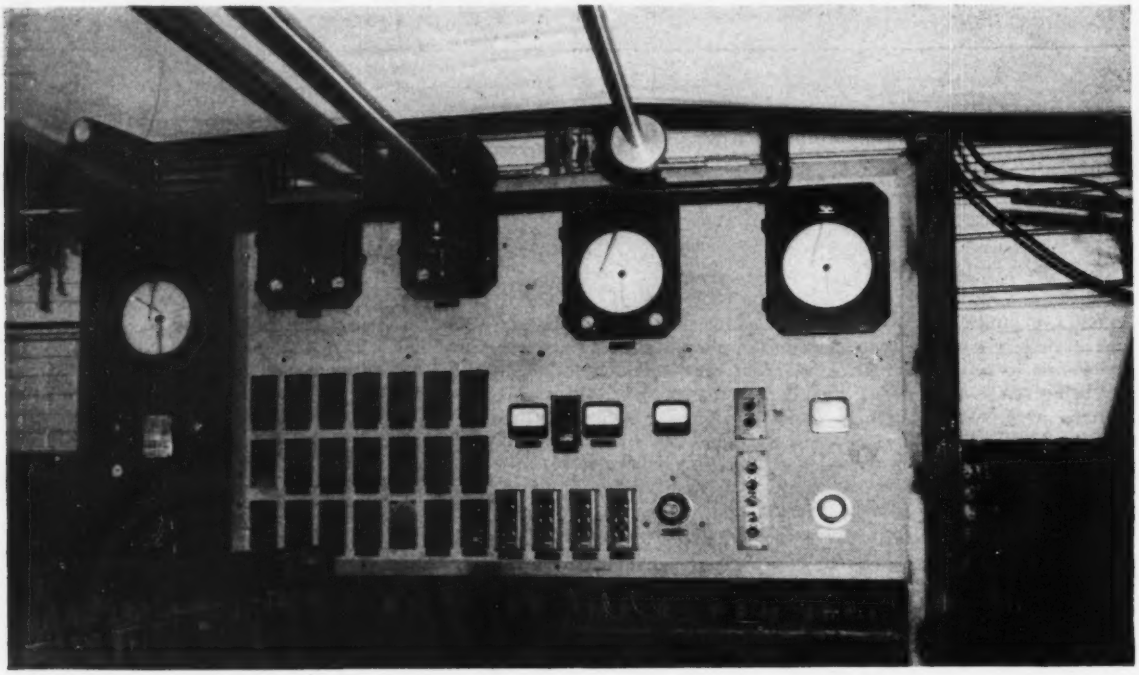
One factor sometimes overlooked in cot rebuffing is that best quality can be maintained at all times by frequent, light rebuffing to clean the surface of the cot and allow the ingredients built in the cots to give best results. A deep buffing is not necessary—just enough to clean up the outside surface. This way you have first-class rolls and quality production at all times. Middle- and back-line cots also should he rebuffed at regular intervals because these cots definitely affect the running of your work. With today's higher drafts and heavier weights, the condition of the back-line cots becomes more important.

Positive-diameter rolls are being used on some frames now. Since these cots will last quite some time, it is often desirable to clean off the fiber oils and waxes that accumulate on the cot. Since these cots cannot be rebuffed, they are wiped off with a cloth or piece of waste dampened with carbon tetrachloride. Check with your cot service man to be sure that your cleaning agent doesn't damage the cots.

A minimum diameter for rolls and shells in your mill should be established for the information of your roll coverer. As cots get small and the circumference approaches the length of staple being processed, trouble can develop. Also, there often isn't enough cushion to give the proper control for efficient drafting.

There are many factors that enter into rebuffing frequency—draft, type of fiber, type of cot, condition of bottom rolls, type of clearers, and quality of work. Cot cost per spindle hour or per pound of yarn is very low, and cots should not be allowed to go too long between buffings if you want best quality at all times.

Based on a talk by Albert C. Littlejohn, Armstrong Cork Co., at a meeting of the South Carolina Div., Southern Textile Association, at Ware Shoals, S. C.



CONTROL PANEL near pigment padder contains controls for all motors in the range and for pigment padder and dryer. The chart at left is recording the pressures on both ends of the pigment-padder rolls.

This DYEING RANGE Boosts Quality, Cuts Costs

▶ Shade uniformity, dye economy, and fabric quality have all been increased with the installation of an adequately controlled continuous dyeing range for cottons at Kerr Bleachery. The human element has been minimized by the inclusion of these controls—

- **Roll-pressure controls on padders, washers, and Williams units**
- **Caustic and hydro recorder on chemical padder**
- **Automatic temperature and level controls at necessary points**

By MICHAEL LONDON
Assistant Editor, TEXTILE WORLD

VERSATILITY AND SIMPLE CONTROL of all operations are features of the recently installed continuous dyeing range for cotton fabrics at Kerr Bleaching & Finishing Works, Inc., Concord, N. C. According to Eugene V. Correll, superintendent of dyeing, the range embodies the latest proved features of continuous dyeing. Cost of the complete unit was about $250,000.

A wide range of fabrics, from the lightest weights to ducks weighing 2 lbs. per yd., can be dyed on the range. Sulfurs, vats, and naphthol dyes are used in the unit. Recently, a refrigeration unit was installed to keep the liquor temperature down to 50° F. in naphthol dyeing.

Fabric speed through the range varies from 40 to 165 yds. per min. For example, 1-yd.-per-lb. drapery fabrics dyed with naphthols are run from 40 to 50 yds. per min., while broadcloths weighing 4 yds. per lb. are vat dyed at 150 to 165 yds. per min.

Layout of the Range

The range consists of a pigment padder, a dryer, a chemical padder, a steamer, 2 Williams units, 6 wash boxes, and a battery of 60 dry cans. It is operated by a dye mixer, a padder operator, an inspector, and a general operator who maintains watch over all controls other than the pad controls. A Reliance drive with 24 individually controlled motors drives the range.

The processing arrangement can be varied to suit different dyeing methods. For example, in naphthol dyeing the dye is applied in the pigment pad, dried in the hot flue, and coupled in the chemical pad. The fabric then passes through the unheated steamer and is washed in the Williams units.

The steamer helps produce heavier

shades in sulfur dyeing, resulting in dyestuff economy. The steamer also makes it possible to dye fabrics with some sulfur-dye types previously unusable, and it produces better vat dye shades in short runs.

Controls Minimize the Human Element

Panels containing the controls for all the operations are located at three points along the range. Each unit, except the dry cans, is equipped with automatic temperature controls. Squeeze-roll pressure is controlled in the padders, the Williams units, and the wash boxes; and liquid levels are automatically controlled in the padders and Williams units. Conveniently located close to the pigment padder, the first control panel contains controls for each motor in the range and for the pigment padder and dryer.

Pressure Controls Aid Uniform Shading

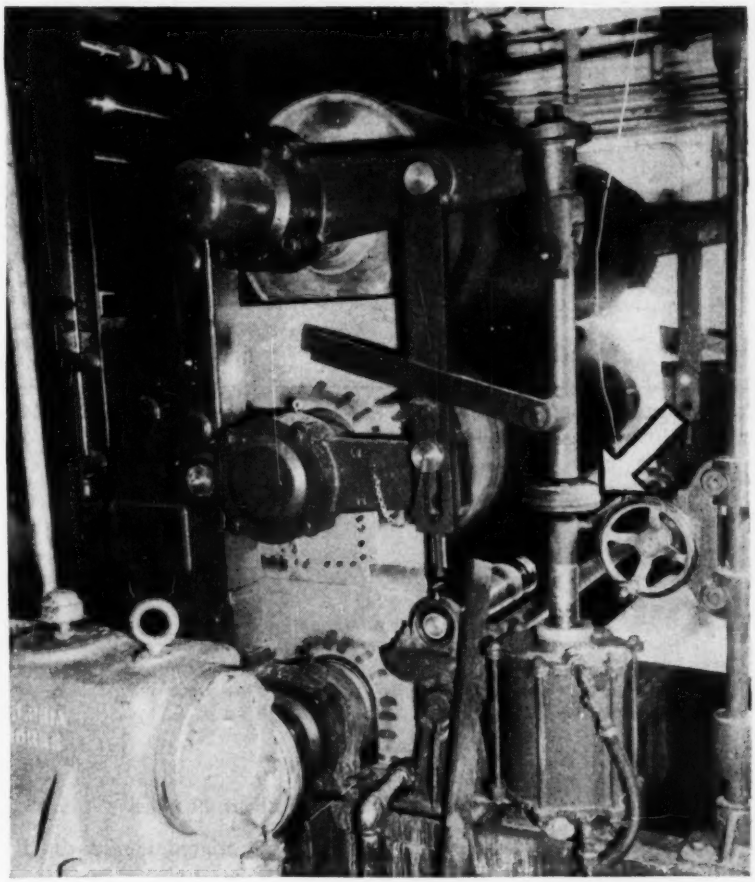
Taylor instruments control the pressure on each end of the squeeze rolls of both padders, the Williams units, and the wash boxes. With these attachments, there is a positive pressure reading at the squeeze rolls that keeps side-to-side shading at a minimum. The control, when used with charts of previous operations, enables shades to be repeated very closely after long periods of time.

The pressures are measured by volumetric elements at both ends of the squeeze rolls. These elements are located in the connecting rod between the air cylinder and the movable roll. Pressures at both ends of the squeeze rolls are recorded on a chart by two pens.

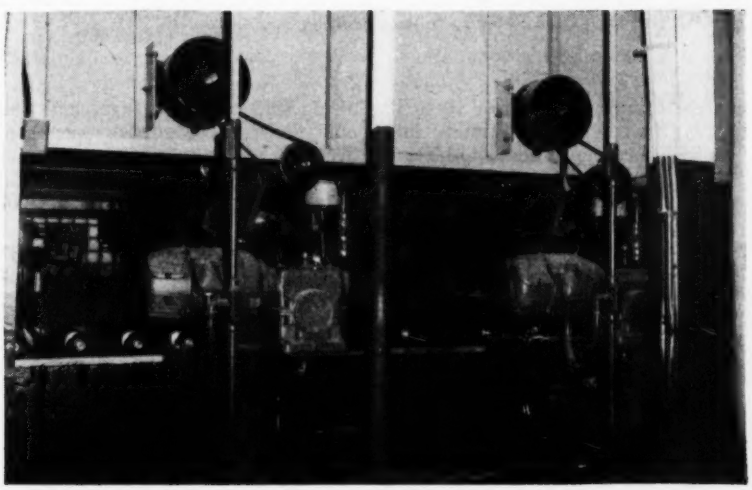
Taylor controls also automatically control the liquid levels on the padders and the Williams units.

A Redox unit constantly records the caustic and hydro concentrations in the chemical padder and helps produce the shades desired.

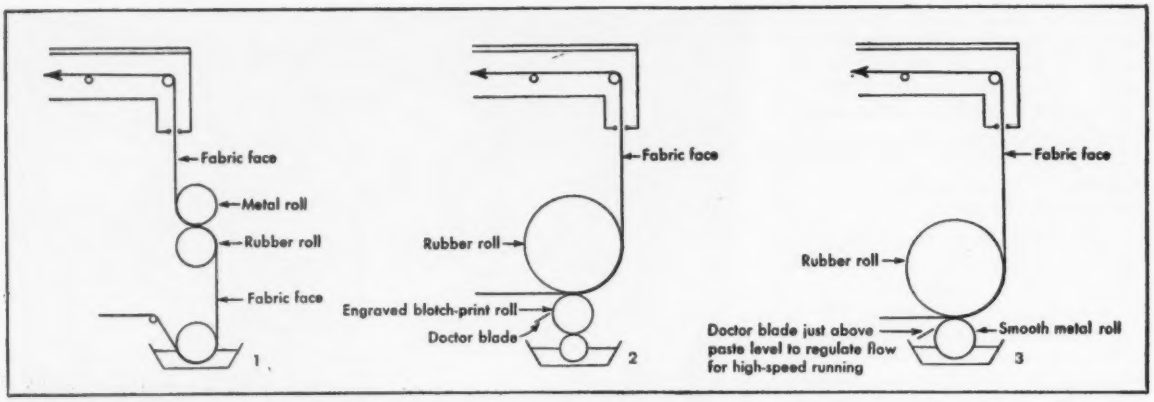
Two controls automatically govern the entering and delivery temperatures of the dryer, an Andrews & Goodrich unit capable of producing temperatures up to 333° F. Four fans with variable velocity are used in the dryer and are controlled from the first panel. The easily regulated temperature and fan velocities are important in the processing of poplins, oxfords, and lightweight broadcloths that tend to wrinkle under the wrong conditions of heat and air velocity.



PRESSURE CONTROL on one end of the pigment-padder rolls is based on the reaction of the volumetric element (arrow) in the connecting rod between the air cylinder and the movable roll.



WASH BOXES located after the Williams units are driven by individually controlled motors. The range contains 24 of these motors. The wash boxes have automatic temperature and roll-pressure controls.



THREE PADDER SETUPS are being used with flash agers: (1) a conventional two-roll padder with solution pan and immersion roll; (2) an engraved blotch roll with doctor blade; and (3) a smooth metal roll with doctor blade.

How FLASH AGEING Speeds Vat Printing

- **Ageing now takes 10 to 30 secs. instead of about 12 mins.**
- **Colors are brighter, less dye is used, and the printed fabrics can be stored before ageing and washing**
- **Key to success is proper choice of thickeners and dyes**

By JOHN W. OGLETREE, Polymer Industries, Inc.

FLASH AGEING, which takes 10 to 30 secs., transforms vat printing into two high-speed operations. Other advantages include lower initial cost of the ager, less floor space, lower dye costs because of increased color yields, wider range of dyestuffs possible, and ability to store printed fabrics before ageing and washing.

The vat dye is printed with a neutral thickener (a low-solids gum without reducing chemicals), dried, and batched. The goods can then be stored for an indefinite period if necessary. To finish the process, the printed goods are padded with a solution of caustic soda and sodium hydrosulfite and then flash aged at 218 to 230° F. for 10 to 30 secs.

The ager is in tandem with an oxidizing and washing range, and the only limits to production speed are dyestuff reduction, oxidation, and washing and drying capacity. Fabric weight determines the balance of these factors.

The biggest obstacle in the process is keeping the outlines sharp and the ground areas clear. The following mechanical and chemical factors contribute to success in flash ageing.

Mechanical Factors

Printing

Select the engravings to keep the dye on the surface of the fabric as much as possible. Consider the style and weight of fabric, and don't forget that the low-solids gum punches in deeper than a conventional, high-solid paste.

Regulate the setting of the color rolls and crush rolls to favor surface application.

Don't overdry: a hard-baked thickener film is hard to penetrate and resists quick rewetting by the reduction solution.

Padding

In selecting a padding method, consider the weights of fabrics likely to be processed, the speed desired, and color overlays. Aim for adequate wet pickup to insure complete reduction without excessive saturation. Excessive wet pickup causes flushing and excessive penetration of the leuco or soluble-color complex to the back of the fabric. This soluble color on the back of the fabric is likely to cause a mark-off by contact with the supporting rollers in the ager.

Here are three padder layouts that are being used successfully:

1. Conventional two-roll padder, with solution pan and immersion roll.

Some dyers prefer two rubber rolls; others like one metal and one rubber roll. (I personally favor a highly pol-

ished stainless-steel roll in contact with the printed face of the fabric and a rubber roll for a cushion.)

Rolls should be pneumatically loaded to insure a uniform deposit and to allow pressure variations to obtain saturations of 65 to 80% on all fabrics. The fabric should be threaded around the immersion roll to present a convex printed surface to the reduction solution.

A low-volume solution pan allows a fast turnover of solution and thereby minimizes dirtying or tinting of the ground area of the fabric.

The supply line for the reduction solution should have several outlets across the pan, and liquid-level controls should be installed if possible.

This conventional padder is adaptable to a wide range of fabric weights but is especially good for heavy fabrics.

2. Engraved blotch roll with doctor blade (a Du Pont patent)

A wide variety of fabrics can be processed by this method, which applies the thickened reduction chemicals by an engraved blotch roll with a doctor blade. Wet pickup is controlled by the engraved roll, which is selected for the particular fabric being processed.

Difficulty with wet selvages can be overcome by running a continuous back gray on the padder.

3. Smooth metal roll with doctor blade

Best for lightweight fabrics, this method, which applies the thickened reduction chemicals by a smooth metal roll with doctor blade, can be modified to handle heavier fabrics by adding a solution pan and immersion roll.

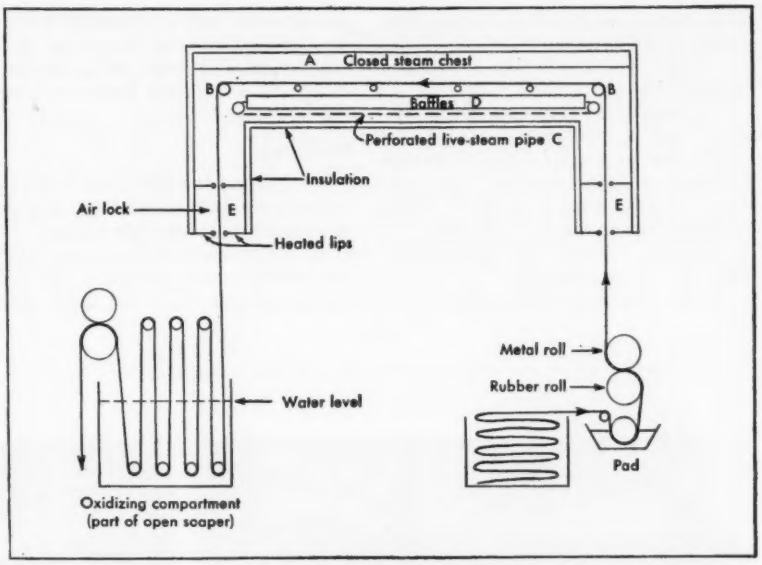
The smooth roll eliminates the wet-selvage problem.

Ageing

Although some tower and "A" agers are being used, the horizontal type is the most popular. Details are given in the accompanying diagram.

Ager dimensions are determined by production speed. To provide flexibility for processing a wide variety of fabrics, allow up to 30 secs. exposure time in the ager. Ager speed should also be balanced with oxidizing, washing, and drying capacities.

The reduction speed of the vat dye (the rate of dyeing in the ager) depends on these factors: (1) chemical balance of the reduction solution (ratio of hydrosulfite, caustic, and other additives for buffering, etc.); (2) weight of fabric being processed; (3) percent of wet pickup; (4) temperature and steam conditions in the ager; (5) speed (time in the ager); and (6) nature of the gum carrier of the dyestuff (rewetting time).



HORIZONTAL AGER is a rectangular box equipped with: *A*—a steam chest to prevent condensation and keep temperature constant; *B*—driven supporting rolls for the fabric; *C*—perforated live-steam pipes to furnish steam in sufficient volume to maintain ager temperature; *D*—baffles or screens over the steam pipes to protect the fabric from direct blasts that might cause spotting; *E*—special entrance and exit lips to keep out air drafts and eliminate dripping condensate.

The cold, wet fabric entering the ager must be exposed to enough heat to raise its temperature to the dyeing point in the desired time. These factors must be manipulated to reach a balanced condition and will naturally vary from plant to plant. For this reason it is not practical to state specific ager temperatures. It may, however, be helpful to mention some average practical running conditions.

For a wet pickup of approximately 70% of reduction solution (see formula for typical reduction solution) on a medium to heavy fabric, the ager temperature can be set at 225° F. for 20 secs. exposure. The live-steam supply is taken from a relatively low-pressure line (50 psi.). Good steam distribution, of course, is necessary.

The ager must be kept free from air and drafts. It is very important to maintain properly heated and insulated lips with close tolerances.

Oxidizing

The object here is to (1) oxidize the leuco complex back to its original insoluble state, (2) neutralize the caustic, and (3) get rid of as much of the chemicals and gum as quickly as possible.

This is an extremely important step and should not be treated as in conventional vat-printed goods. As the hot fabric emerges from the ager, the vat dye is completely soluble and is subject to migration or mark-off if not handled properly. It is important that at least three open-width washer compartments be allocated to this operation. If very high-speed production (100 yds. per min.) of medium and heavy fabric is contemplated, more oxidizing capacity may be needed. The oxidizing compartments should be provided with skying rolls about 3 to 4 ft. above the solution level and squeeze rolls between compartments to prevent excessive carryover or loss of chemicals.

The manipulation of this setup is not always standard and is subject to experimentation from plant to plant. Some prefer to run with cold water (with good volume overflow) in the first compartment, peroxide and acetic acid or chrome and acetic acid in the second compartment, and cold water with overflow in the third compartment. Where cold-water compartments are used, cold-water sprays on the fabric are also helpful in supply-

ing oxygen and loosening and neutralizing the chemicals.

Other plants prefer to run acetic acid in the first compartment, the selected oxidizing chemicals in the second, and a cold-water rinse in the third. Some screen printers, perhaps because of print overlays, find best results in using the selected oxidizing chemicals in the first and second compartments, followed by cold water in the third compartment.

(After quick partial oxidation to prevent mark-off, I personally believe in exposure of the prints to large volumes of cold water, when feasible, to complete oxidation before entering the hot soap solution.)

Washing

If oxidation is carried out properly, washing can be a routine practice on open-width washers, rope soapers, etc. Since low-solids, readily soluble gums are used for printing, washing does not usually present too much difficulty.

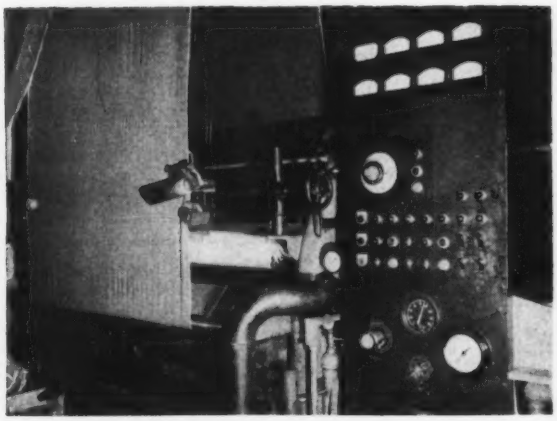
Chemical Factors

The Thickener

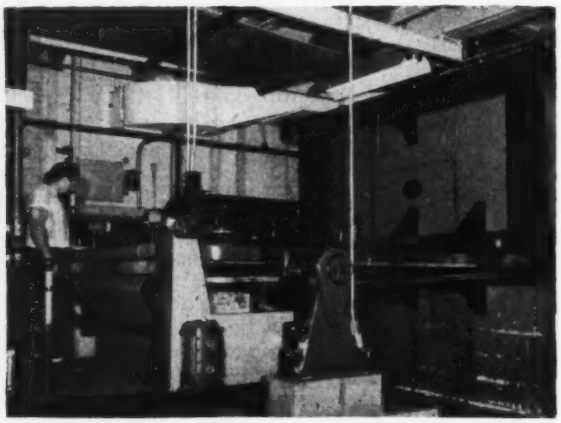
The success or failure of the entire process pivots largely around the thickener and dye.

Factors that should be considered in selecting a thickener are:

(1) high water absorption (low-solids gum), (2) good pigment-dispersing properties, (3) good machining or screening properties (flow), (4) good



A 10-TON PADDER impregnates the fabric with finish. The control panel at right contains a padder-roll-pressure control. The fabric is then predried.



A TENTER FRAME with specially constructed tenter clips receives the cloth from the predryers. Cloth at top, coming from predryers, passes under the operator's platform.

SUPERHEATED-STEAM DRYING Is Efficient and Versatile

► High-temperature-steam drying is used at Cliffside Dyeing Corp. in finishing many different fabrics of a variety of blends, widths, and weights. Advantages obtained from this drying method include—

- Shorter drying space required
- Loftier fabrics with no resin migration obtained
- Overdrying eliminated

By MICHAEL LONDON, Assistant Editor, TEXTILE WORLD

Progress Report

About a year ago, the first installation of a commercial machine for drying cloth with high-temperature steam was made in the United States [TW, June, '53, p. 108].

Here is a report on how this drying method is working out.

color yield, (5) ability to hold and maintain a sharp object outline (chemically balanced to react favorably with the reduction solution), (6) ease of preparation, (7) cleanliness, (8) uniformity, and (9) economy.

Some of the early thickeners used in this process (locust-bean gum, methyl cellulose starch combinations, starch derivatives, and mixtures of these sometimes with alginates) had a number of desirable properties but lacked some particular property that prevented realization of the full benefits of the process.

Locust-bean gum, while very economical, has relatively poor pigment-dispersing properties and only fair color value with poor machining and screening properties. Chemical modification minimizes these difficulties and increases solubility.

Methyl cellulose, while excellent for holding a fine printed outline (due to its heat sensitivity), is a poor dispersing agent for vat dyes and produces poor color value. These properties can, of course, be improved somewhat by adding starches.

Starch and some starch modifications are excellent for dispersing vat dyes and producing color value. They are very economical; but, because of their lack of penetration and usually higher solids and poor rinsability, they are likely to cause a great deal of mark-off trouble.

Controlled manipulation of the

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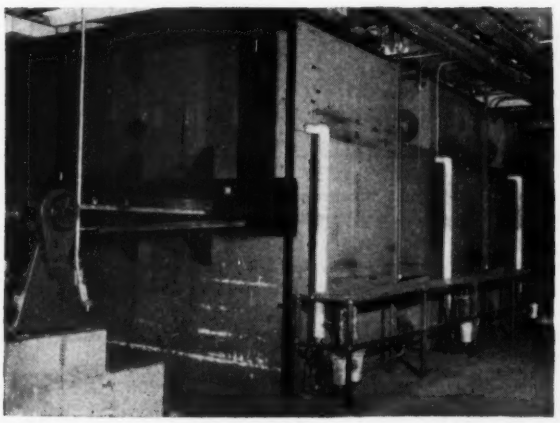
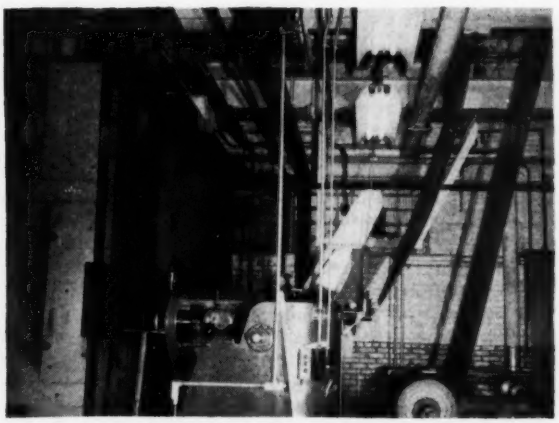


MAIN DRYER processes the cloth on a tenter frame. Inside the dryer, high-temperature steam is impinged on the cloth at the rate of 6,000 ft. per min.



CURED AND CONDITIONED CLOTH is rolled on a batch roll. Fabrics that do not require curing go directly from the dryer delivery end (left) to the batch roll.

Cliffside Dyeing Corp., Paterson, N. J., has been using a superheated-steam dryer for over a year to process a great variety of fabrics composed of most existing commercial fibers. The fabrics, including gabardines, flannels, and twills, range from widths of 38 to 62 ins. and from weights of 8 to 16 oz.

According to the Cliffside engineering department, the 50-ft. dryer equals the production of 150-ft. units that use other drying-heat sources. The range at Cliffside finishes resin-cured fabrics at the rate of 60 yds. per min.

Cloth is dried by steam raised to 280 to 300° F. impinged on the cloth at the rate of 6,000 ft. per min. The temperature and speed of the steam dry the fabric almost instantly so that the chances for a surface deposit of resin are minimized.

Fabrics dried by this method are lofty, with a fine hand; and there is no evidence of a harsh surface caused by resin migration. The vapor retained in the delivered cloth condenses at room temperature, and the danger of overdrying is eliminated.

The range used by Cliffside includes a padder, two predryers, the Hunter Vapojet main dryer, a curing unit, and a conditioning unit. Before coming to this range, the cloth is dyed and dried on a conventional hot-air dryer.

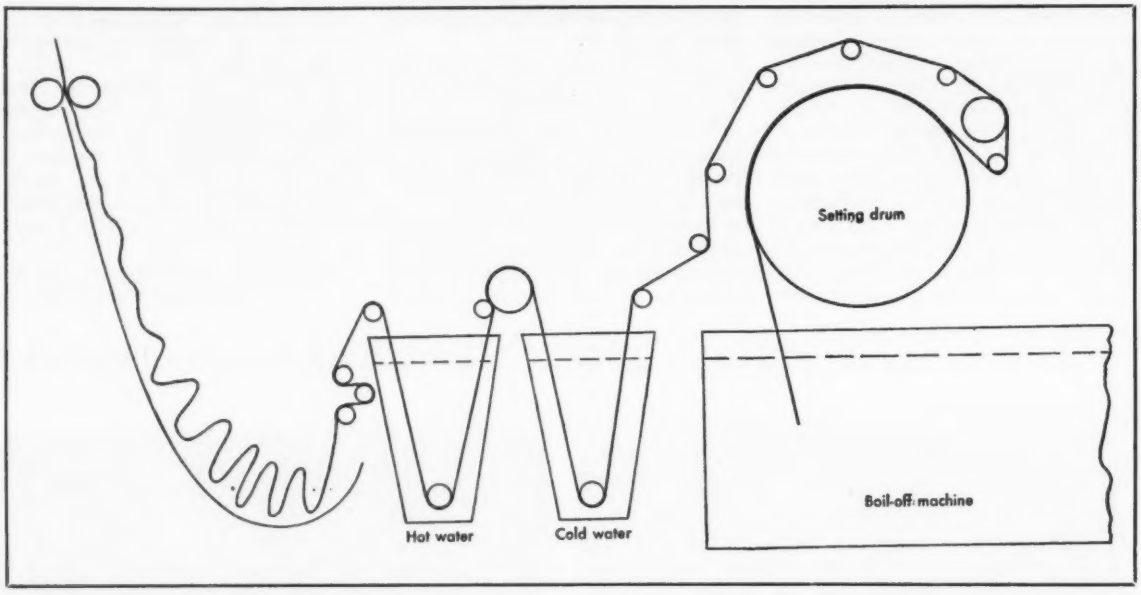
The range is operated by three men, one at the padder, another at the tenter-frame feed, and the third acting as a doffer at the batch roll. The man at the feed also assists the doffer when necessary.

Urea-formaldehyde and silicones comprise the bulk of finishing materials used. A 10-ton padder with a Foxboro roll-pressure control impregnates the fabric with the finish.

After being padded, the cloth is passed vertically through two 10-ft. predryers located one floor above the main dryer. Although no tenter frames are used with the predryers, these machines use high-temperature steam for the drying medium, as the main dryer does. Predried fabric enters the main dryer on a tenter frame. Special Marshal & Williams tenter clips with a comb-type lower plate make it possible to overfeed up to 20%. In the main dryer, the fabric is again hit with fast superheated steam.

Steam consumption for the dryers in the range is 2,200 to 2,500 lbs. per hr. The utilization of the steam is efficient, however, for expended steam is reheated by coils and reused.

From the main dryer, the cloth goes to a gas-heated curing unit set on the same floor as the predryers. The temperature in the curing oven is over 300° F. and is controllable to within 2°. Following curing, the fabric passes through 100%-water-saturated air in a conditioning unit.



TWO SPECIALLY CONSTRUCTED TANKS placed before the boil-off unit are used to preset the spun-acetate fabric. The first tank contains water and a wetting agent at 205° F. The second tank contains plain cold water kept overflowing to maintain a constant low temperature.

SHOCK SETTING Spun Acetate Prevents Dyeing Defects

▶ To eliminate crease marks in dyed spun-acetate fabrics, subject the fabric to a radical temperature change before it enters the boil-off unit

By MELVIN ALPERT

A SIMPLE TREATMENT can offset the tendency for spun-acetate fabrics to develop crease marks when dyed in rope form. The treatment, known as shock setting, has been used in acetate-tricot processing for many years.

The shock-setting principle is based on the fact that acetate fabrics are extremely sensitive to sudden temperature changes. The crease marks appearing in dyed fabrics are usually the result of the material being shock set in rope form. Such fabrics preset and then dyed below the original setting temperature would be less likely to develop these defects.

A fabric can easily be preset by passing it through two specially constructed tanks before entering it into a standard boil-off unit. The first tank should contain water and a wetting agent at 205° F. The second tank should have plain, cold water overflowing to maintain a constant low temperature. The course of the gray fabric is from the hot tank to the cold tank and into the boil-off unit. The use of a scray before the tanks permits a continuous operation.

A series of guide and expander bars is necessary to keep the material free of wrinkles before it enters the boil-off machine.

The process is simple and efficient, but the type of size in the gray fabric must be considered. Sizes consisting of gelatin, gum, or soluble starches present no difficulty. However, if the starch requires an enzyme for removal, the bath in the hot presetting tank should be changed when it becomes too dirty.

This method of shock setting is recommended only for spun-acetate fabrics. Filament acetates such as crepes require a different type of processing. Since flat fabrics are generally processed on jigs in open widths, there is no creasing problem and shock setting is not required.

Crepes can be shock set by a cold-spray rinse after the goods have left the main boil-off tank. However, two disadvantages are: (1) lighter fabrics may leave the main tank in a slightly folded or creased condition and (2) the cold final rinse makes the fabric stiff and harsh. The stiffness makes it necessary to give the fabric a warm scour in the dyebeck before dyeing.

Here's a Round-Up On WASHABLE WOOLENS

► For many years, finishers of wool fabrics have been struggling to produce completely washable fabrics. The goal is being attained, but some difficulties still exist. In order to make a shrink-resistant, washable fabric, the finisher must—

- **Eliminate felting shrinkage**
- **Eliminate relaxation shrinkage**
- **Use washfast dyes**

By E. A. MURRAY, Chemical Engineer

COMPETITION FROM OTHER FIBERS has increased the demand that woolen sportswear, children's clothing, and blankets be made washable. Although shrink-resistant wool fabrics are being produced, they have not had complete consumer acceptance for two main reasons:

1. Most existing commercial shrink-resistant processes impart certain undesirable qualities to the fabric.

2. In a truly washable woolen fabric, felting and relaxation shrinkages must be eliminated and sufficiently bright, washfast dyes must be used. To meet any one of these requirements completely is difficult; to meet all three has, up to now, been all but impossible.

Why Wool Shrinks

The amount of shrinkage in a laundered wool fabric depends on several factors such as fiber composition, cloth construction, and severity of laundering. Two different types of shrinkages affect a laundered fabric. In order to produce a washable woolen, the finisher must consider each:

1. Relaxation shrinkage is the tendency of the fabric to return to its original form before the stresses of finishing operations distorted it. Relaxation shrinkage, not peculiar to woolens, exists in all fabrics that have not been treated to remove it. In Sanforized cottons, for example, relaxation shrinkage has been eliminated by compressive shrinking.

2. Felting shrinkage is a property of most animal fibers such as wool, mohair, and rabbit fur. Fabrics having a high content of wool or other animal fibers do not stop shrinking after the first washing. This type of shrinkage cannot be prevented by a mechanical process like compressive shrinkage and a felted article cannot be restretched to its original shape.

In this article we shall deal for the most part in evaluating past and present processes for preventing felting shrinkage.

Fiber Surface Causes Felting

The exact principles of felting shrinkage are not completely understood. A basic factor, however, is unquestionably the surface structure of the animal fibers. These fibers, when viewed through a microscope, appear to be covered with tiny, sharp, ratchet-like projections similar in shape to the teeth of a file. The sharp edges all point toward the fiber tip. Thus, when the fiber is pulled in the direction of its tip, the pointed edges will produce considerably more friction than when it is pulled in the direction of its root. This phenomenon, called directional frictional effect or D.F.E., causes the fiber to travel, when flexed, in the direction of the root end.

Surface Change Stops Felting

All commercial shrinkage-control processes for wool depend on reducing the sharpness of the projections on the fiber surface. The sharp edges can be removed, or the spaces under them filled with an insoluble material.

Woolen fabrics milled with fine abrasives, such as silica or Carborundum suspended in oil, have been prevented from felting. The effect is like sandpapering the fibers to remove the scales. Such processes have never been commercialized because weight loss and damage are high before the shrinkage is adequately controlled.

In another process, enzymes are used to digest the rough surface. An enzyme called papain was used in a treatment patented in England nearly 20 years ago. However, damage to the fiber and high cost have prevented the process from becoming commercially successful.

The Tootal-Broadhurst-Lee method subjects wool to caustic soda in a solvent mixture of alcohol and naphtha. Wool, which is rapidly attacked by sodium-hydroxide solutions in concentrations below 15%, can be easily stabilized by this method. However, it is easily damaged in the process, and insurance companies frown upon the solvent method. So far as is known, the caustic process has never been used commercially in this country.

Among the most popular methods of preventing felting shrinkage by removing surface roughness are the Sanforlan and Harriset processes. Both these methods use chlorine to oxidize the fiber surface. They both have been used commercially to process considerable yardages of both civilian and military fabrics. There are a number of other chlorination processes, but these two have met the most general acceptance in the United States.

The Sanforlan process, controlled in the United States by Cluett-Peabody & Co., was developed in England and is known there as the

Stevenson-Wolsey process. The fibers are oxidized by a dilute mixture of sodium hypochlorite and potassium permanganate under closely controlled concentration, temperature, and pH. The dilute bath usually contains 2 to 3% available chlorine based on the weight of the goods. After the chlorine treatment, the fabric is treated with an antichlor to remove traces of unreacted hypochlorite. The Sanforlan process is a batch method, and the hypochlorite is generally applied to the fabric in a dye kettle.

The Harriset Process, developed by Harris Research Laboratories, Washington, D. C., is a continuous chlorination process for both wool top and piece goods. The wool is treated in relatively concentrated hypochlorite solutions, normally containing between 1 and 2% available chlorine based on the bath weight. After a very brief exposure to the hypochlorite solution, usually not more than 10 secs., the fabric is treated with an antichlor. Good stabilization requires close control of temperature, concentration, time of exposure, and pH.

When properly treated, chlorinated wool has excellent stability with a minimum of damage. Despite the necessity for close controls, the chlorination processes do not present unusual difficulties to the finisher. The Department of the Army has purchased several million yards of chlorinated woolens since the end of World War II.

However, several drawbacks are present in chlorinated woolens:

1. The wool, despite careful treatment, loses weight and is somewhat damaged.
2. The natural water repellency of the wool is reduced.
3. Chlorinated wool usually feels harsher than untreated wool.
4. It is difficult to treat heavy fabrics such as blankets. By the time the fibers inside the fabric are adequately treated, surface fibers are likely to be damaged.

Resins Inhibit Felting

Many products can be used to mask the projections on wool fiber surfaces to eliminate the directional frictional effect. Most of these products are synthetic polymers or polymer-forming materials. However, certain melamine resins are the only ones that have been used in substantial volume for commercial wool stabilization. American Cyanamid's Lanaset and Monsanto Chemical's Resloom are examples of these melamine resins.

The melamine resins are supplied either as dry powders or as clear water solutions. Two methods of application are used. In the older process, the goods are padded in a bath containing resin, an acid catalyst, and a wetting agent. The fabric is then dried and cured at 290 to 300° F. for approximately 5 mins. The cured resin becomes hard, permanently insoluble, and firmly attached to the wool. It will withstand repeated launderings and controls shrinkage very well when properly applied. After being cured, the fabric is usually given a light scour in a bath containing mild alkali and a synthetic detergent to remove uncured resin.

Lately, the original melamine-resin process has been modified to a more effective method known as the acid-colloid treatment where the regular resin is partially cured before being applied to the fabric. The colloid is prepared by treating the resin with acetic or glycollic acid. After ageing for several hours, the resin changes from a true solution to a partially polymerized colloidal dispersion. This dispersion, padded on the fabric, cures at lower temperatures, and less resin is required than with the older process. Both processes have been used commercially on substantial yardages of consumer and military fabrics.

While a number of polymers in emulsion or latex form have been suggested for wool-shrinkage control, few have found widespread industrial acceptance.

The new Australian SI-RO-FIX process controls shrinkage by applying a chemically modified nylon to the wool from an alcohol bath. Excellent shrinkage control has been reported, and a number of mills in this country are now evaluating the method. The disadvantages of solvent processes in finishing plants will probably be an obstacle to the widespread acceptance of this process.

However, the additive treatments also have their drawbacks. The most serious of these is probably the stiffness of the treated fabrics. The stiffness is caused by an excess of resin solution between the fibers that binds some fibers together during drying. A very high squeeze pressure in padding can minimize the stiffening, which is very difficult to eliminate completely. Softeners, occasionally helpful in restoring the original hand, are not very fast to laundering. The consumer's demand for a desirable hand in a fabric is largely responsible for the lack of widespread acceptance of resin treatments.

Overfeeding Is Not the Answer

To produce a washable woolen fabric, it is necessary to reduce relaxation shrinkage to a minimum. However, no method comparable to the Sanforized process is available for woolens. The best results, usually obtained by overfeeding, do not approach those obtained in the compressive shrinkage process on cottons. The relatively loose construction of woolens makes it unlikely that wool shrinkage tolerances will ever be made as low as cotton tolerances.

Dyes Must Be Washfast

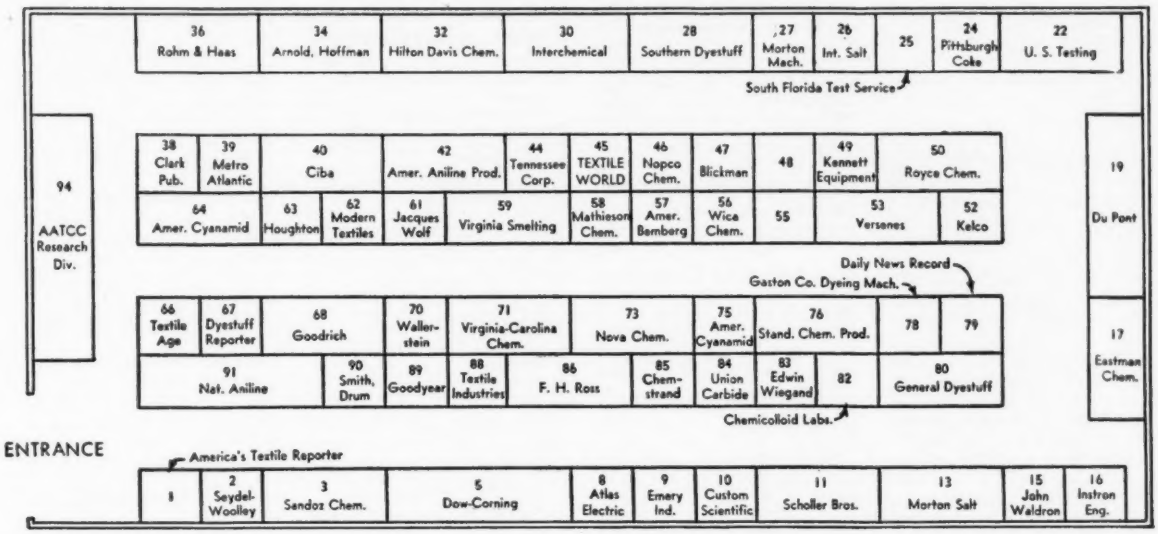
Almost as important as adequate shrinkage control is the problem of selecting dyestuffs with the desired brightness and the necessary washfastness on the stabilized fabric. Conventional acid dyes are not well suited for fabrics that will be washed repeatedly. With few exceptions, they bleed in laundering.

Chrome dyes, metallized dyes, and the newer neutral-dyeing metallized dyes are relatively colorfast. However, these dye classes are not yet available in a full range of bright shades.

It is impossible to arrive at an average cost for washable finishes because processing costs vary so widely through the industry. Chlorination is less expensive than resin treatment, but higher resin cost is partly offset by added fabric weight.

OUR COVER

An operator takes a look at what is going on in a pad box. This action common to most bleaching, dyeing, and finishing plants was chosen for this month's cover because of this feature section on these operations.



American Association of Textile Chemists and Colorists

33rd NATIONAL CONVENTION

The American Association of Textile Chemists and Colorists will hold its 33rd National Convention at the Atlanta Biltmore, Atlanta, Ga., September 15, 16, 17, and 18. The exhibits will open at 9:00 a. m. Wednesday, September 15, and will close at 6:00 p. m. Friday, September 17. New developments by dyestuff, chemical, and resin manufacturers, as well as machinery and laboratory equipment, will be on display.

Highlights of the AATCC program include the Olney Medal Award luncheon Thursday, the textile schools' alumni luncheon Friday, the Intersectional Prize Paper contest Saturday morning, and the annual banquet and the presentation of the Intersectional Prize Paper Award Saturday night.

TEXTILE WORLD is located in Booth 45. We extend a cordial invitation to all visitors to stop by to see us.

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W. Six
L. Nave

AMERICAN CYANAMID CO., ORGANIC CHEMICALS DEPT. (64-65, 75)
30 Rockefeller Plaza, New York, N. Y.
Features Cyana Permel Plus and Cyana Superset textile resin finishes.
Representatives at booth:
L. A. Fluck
Dr. T. F. Cooke
R. L. Greason

AMERICAN DYESTUFF REPORTER (67)
44 E. 23rd St., New York, N. Y.
Features a textile publication.

AMERICA'S TEXTILE REPORTER (1)
256 Congress St., Boston, Mass.
Features a textile publication.

ARNOLD, HOFFMAN & CO. (34-35)
55 Canal St., Providence, R. I.
Features a display illustrating the impact of color on women's fashions.
Representatives at booth:
W. C. Cobb
T. H. Roberts
R. Tull

A. Merrill
M. Fox
D. L. Turner
J. Dulin
J. Graham
P. Lavoie
W. Mills
W. F. Kennady
L. Shive
G. Watt
L. C. Connors

ATLAS ELECTRIC DEVICES CO. (8)

361 W. Superior St., Chicago, Ill.

Features the Fade-Ometer, Launder-Ometer, scorch tester, and Accelerator.

Representatives at booth:
J. E. Norton
B. J. Alport
R. R. Metzinger
F. Slaughter

S. BLICKMAN (47)

534 Gregory Ave., Weehawken, N. J.

CARBIDE & CARBON CHEMICALS CO., A DIV. OF UNION CARBIDE & CARBON CORP. (84)

30 E. 42nd St., New York, N. Y.

Features antistatic agents, dye chemicals, chemicals for fiber synthesis and modification, intermediates for resin finishes, surface-active chemicals, and water-soluble lubricants.

Representatives at booth:
D. S. Alcorn
B. A. Gustin, Jr.
J. R. Harlow
R. N. Joslin
C. P. McClelland
E. D. Norton
W. E. Rixon
J. W. Walter
J. H. McCormick

CHEMICOLLOID LABORATORIES (82)

30 Church St., New York, N. Y.

Features a colloid mill.

CHEMSTRAND CORP. (85)

350 Fifth Ave., New York, N. Y.

Features Acrilan acrylic fiber and Chemstrand nylon.

Representatives at booth:
R. E. Smith
W. H. Hindle
S. J. Davis
M. R. Dalton

CIBA CO., INC. (40-41)

627 Greenwich St., New York, N. Y.

Features practical applications of new developments.

Representatives at booth:
K. R. J. Horner
S. I. Parker
W. H. Kieffer
Dr. C. J. Weidmann
S. L. Hayes
A. T. Brainerd
C. T. Anderson
R. W. Jacoby
E. P. Ward
M. G. Stern
G. L. Rattye
E. L. Caswell

CLARK PUBLISHING CO. (38)

P. O. Box 1225, Charlotte, N. C.

Features a textile publication.

CUSTOM SCIENTIFIC INSTRUMENTS, INC. (10)

541 Devon St., Arlington, N. J.

Features the C & R tester, Celanese wrinkle tester, mechanical cotton blender, pilling tester, electrical resistance tester, positioning assembly and rigid yoke, and a diaphragm.

Representative at booth:
H. J. Bultman, Jr.

DAILY NEWS RECORD (79)

7 E. 12th St., New York, N. Y.

Features a textile publication.

DOW CORNING CORP. (5-7)

Midland, Mich.

Features a new silicone finish for wool and wool-synthetics blends, and upholstery fabrics; durable water-repellent treatments for synthetics and blends.

Representatives at booth:
F. L. Dennett
E. M. Eddington
R. A. Ford
R. B. Ehlers
C. E. Gibson
R. C. Wolfe
R. M. Dameron

E. L. DU PONT DE NEMOURS & CO., INC. (19-21)

Wilmington, Del.

Representative at booth:
C. B. Harris

EASTMAN CHEMICAL PRODUCTS, INC. (17-18)

Kingsport, Tenn.

Features dyes. Examples of piece dyeing and screen printing will be displayed.

Representatives at booth:
Dr. J. E. Magoffin
C. P. Echerd
D. B. Carmichael
R. J. Fortune
C. L. Rutherford
W. R. Ivey
R. G. Cooper
V. Paul
R. R. Moore
H. E. Reebel

EMERY INDUSTRIES, INC.(9)

2504 Carew Tower, Cincinnati, Ohio

Features a fiber lubricant for woolens, worsteds, and blends; and rewetting and softening agents for the production of Sanforized fabrics.

Representatives at booth:
K. K. Boyd
R. F. Brown
V. W. Colby
W. A. Colby
E. W. Sack
C. T. Burgess
A. C. Fusaro
N. A. Ruston
W. T. Meinert
R. G. Kadesch
H. T. Buckley
M. H. Smith

GASTON COUNTY DYEING MACHINE CO. (78)

Stanley, N. C.

Features the dyeing of yarn in skein and package form and raw stock at conventional and elevated temperatures.

Representatives at booth:
G. H. Hacker
R. R. Craig
G. Hacker

GENERAL DYESTUFF CORP. (80-81)

435 Hudson St., New York, N. Y.

Features dyeing, printing, and finishing developments.

Representatives at booth:
S. H. Williams
J. R. Bonnar
H. F. Herrmann
R. J. Hamilton
L. S. Thompson
Dr. C. Z. Draves
P. J. Choquette
H. G. Shelton
Dr. C. E. Stevens
E. Hansen
Dr. G. M. Gantz
W. R. Brandt
C. C. Cayce
W. B. Huntley
K. A. Bridges
J. R. Ellis
J. E. Flint
J. O. Atwood
A. F. Garrison
H. C. Wilcoxson
W. G. Green
R. K. Federal
C. A. Sledge
L. R. Waddey
H. A. Webb
W. W. Bussey
I. O. Payne
W. M. Dewing
W. A. Lord
J. L. Eich
E. R. Heintz
H. A. Horstmann

B. F. GOODRICH CHEMICAL CO. (68-69)

324 Rose Bldg., Cleveland, Ohio

Features new applications of its textile specialties.

Representatives at booth:
B. M. G. Zwicker
L. F. Reuter
E. E. McClellan
W. H. Schloenbach
L. H. Williamson
N. Sherwood
T. C. Culver
E. O. Redwine
L. L. Shailer

GOODYEAR CHEMICAL DIV., GOODYEAR TIRE & RUBBER CO. (89)

1144 E. Market St., Akron, Ohio

Features Pliolite and Chemigum latices and suggested applications for these latices.

Representatives at booth
W. F. Gerrow
G. H. Campbell
E. W. Scott
A. R. Merritt
J. E. Warner
J. R. Houlette
I. N. Lanning
H. S. Sell
M. J. Rhoad

HILTON-DAVIS CHEMICAL CO. (32-33)

2235 Langdon Farm Rd., Cincinnati, Ohio

Features pigment - printing colors and pigment-padding colors.

Representatives at booth:
N. S. Knaggs
G. N. Nickles
S. Y. Stribling, III
W. S. Pearson
D. J. Eccleston
W. A. Green
A. S. Davis
V. C. Smith

E. F. HOUGHTON & CO. (63)

303 W. Lehigh Ave., Philadelphia, Pa.

Features an antistatic agent, stock lubricants, a new nonionic detergent, and cotton-warp sizes.

Representatives at booth:
W. H. Brinkley
J. Menin
J. McLaughlin
J. H. Elliott

INSTRON ENGINEERING CORP. (16)

2 Hancock St., Quincy, Mass.

Features tensile and compression testing equipment. A new table model precision tester will be on display.

Representative at booth:
H. W. Cook

INTERCHEMICAL CORP., TEXTILE COLORS DIV. (30-31)

150 Wagaraw Rd., Hawthorne, N. J.

Features Aridye colors and Interchem dyes for natural and synthetic-fiber fabrics.

INTERNATIONAL SALT CO., INC. (26)

Scranton, Pa.

Features Sterling TNA-5 for textile dyeing and the Sterling model lixator.

Representatives at booth:
J. A. Hughes, Jr.
S. J. Martin
N. M. Agnew
W. W. Harris, Jr.
A. J. Hulsebosch
O. W. McKeown

KELCO CO. (52)

31 Nassau St., New York, N. Y.

Features Kelfex-Algin print paste thickener.

Representatives at booth:
F. Habersberger
J. Politi
W. E. Tarvin
C. H. Poovey
C. K. Wall
R. O. Davison

KENNETT EQUIPMENT & MACHINE CO. (49)

Kennett Square, Pa.

METRO-ATLANTIC, INC.(39)

2072 Smith St., Centredale, R. I.

Features new developments in dyestuffs and textile auxiliaries.

Representatives at booth:
J. C. Shore
G. Sarti
J. Valter

MODERN TEXTILES (62)

303 Fifth Ave., New York, N. Y.

Features a textile publication.

MORTON MACHINE WORKS (27)

Columbus, Ga.

MORTON SALT CO. (13-14)

120 S. LaSalle St., Chicago, Ill.

Features brine makers and salt grades.

Representatives at booth:
J. M. Culp
A. C. Dewey
J. C. Drake

Atlanta, Ga.

J. E. Mullinax
E. R. Ravenel
J. D. Smith
C. J. Nadherny

NATIONAL ANILINE DIV., ALLIED CHEMICAL & DYE CORP. (91-93)
40 Rector St., New York, N. Y.
Features dyes, nylon moldings, and synthetic detergents.

NOPCO CHEMICAL CO. (46)
First & Essex Sts., Harrison, N. J.
Features Nopcostats, Nopcosizes, and Syntergents.
Representatives at booth:
J. Gammon
R. B. Macintyre
W. E. Brewer
J. Holmes
D. S. Rion

NOVA CHEMICAL CORP. (73-74)
153 Waverly Place, New York, N. Y.
Features dyestuffs and auxiliary products, a laboratory ager, a laboratory automatic jig, and a laboratory padder.
Representatives at booth:
R. H. Funke
C. A. Funke
H. Levitt

OLIN MATHIESON CHEMICAL CORP., INDUSTRIAL CHEMICALS DIV. (58)
Mathieson Bldg., Baltimore, Md.
Features industrial and hydrocarbon chemicals.
Representatives at booth:
J. F. Carey
D. Richardson
E. S. Norris
F. O. Tilson
R. L. Smart
R. L. Carr

PITTSBURGH COKE & CHEMICAL CO. (24)
P. O. Box 408, Spartanburg, S. C.
Features the Bond dyeing machine.
Representatives at booth:
L. D. Barrick
R. M. Locke
K. Ruppenthal
B. Bond
A. Beane
T. Caldwell
C. Lindsay
A. Medas

ROHM & HAAS CO. (36-37)
Washington Square, Philadelphia, Pa.
Features products used in bleaching, dyeing, and finishing and the use of Rhonite resins in finishing cotton fabrics.
Representatives at booth:
W. A. Wardell
R. G. Lawrence
A. K. Haines
L. C. Harmon, Jr.
C. M. Clevenger
W. J. Thackston, Jr.
H. H. Lawton
H. C. Borghetty

F. H. ROSS & CO. (86-87)
1649 W. Morehead, Charlotte, N. C.
Features industrial chemicals for dyeing, bleaching, and finishing.
Representatives at booth:
A. G. McNair
J. M. Ross
F. S. Webster
J. W. Lovell
J. McDowell
E. R. Hansen
F. Casey
J. T. Hall, Jr.
M. Williams

ROYCE CHEMICAL CO. (50-51)
Carlton Hill, N. J.
Features textile chemicals, hydrosulfites, desizing agents, wetting agents, and several textile auxiliaries.
Representatives at booth:
A. J. Royce, Sr.
A. J. Royce, Jr.
H. C. Royce
R. L. Jones
P. J. Wood
J. Petschow
I. J. Royce
W. Fayssoux
A. Finley
W. Brown
L. Meyer
A. Berube

SANDOZ CHEMICAL WORKS, INC. (3-4)
61 Van Dam St., New York, N. Y.
Features dyestuffs, pigments, and chemicals.
Representatives at booth:
C. W. Saalfrank
H. L. Schwarz
H. R. Walker
M. E. Gossweiler
R. A. Schaefer
R. J. Mitchell
F. H. Casey
J. E. Ormiston
M. H. Klein
A. E. Koch
A. T. Hanes
C. T. Worthen
J. R. Williams
F. P. Mackinney

SCHOLLER BROS, INC. (11-12)
Collins & Westmoreland Sts., Philadelphia, Pa.
Features textile soaps, softeners, scouring agents and finishes, and samples of fabrics treated with these preparations. A new lanolized finish for hosiery will be shown.
Representatives at booth:
L. M. Boyd
J. O. Sweitzer
W. A. Daniel
W. S. Truette
F. C. Scholler

SEYDEL-WOOLLEY & CO. (2)
748 Rice St., N. W., Atlanta, Ga.
Features penetrants, detergents, mercerizing aids, kier assistants, softeners, finishes, dye assistants, and other processing auxiliaries.
Representatives at booth:
V. Woolley
P. Seydel
J. Seydel
C. R. Blumenstein
D. Meriwether
R. P. Anthony

SMITH, DRUM & CO. (90)
432 W. Allegheny Ave., Philadelphia, Pa.
Features a single-package dyeing machine.
Representatives at booth:
R. N. Smith
A. P. March
R. W. Foltz
J. M. Ballentine
P. M. Parrott
S. Huffstetler

SOUTH FLORIDA TEST SERVICE (25)
4201 Northwest 7th St., Miami, Fla.
Features a testing service.

SOUTHERN DYESTUFF CORP. (28-29)
P. O. Box 1045, Charlotte, N. C.
Features exhibits of practical applications of dye products and application techniques.
Representatives at booth:
J. L. Crist, Sr.
L. G. Atkins
Dr. R. E. Rupp
B. Borrmann
G. L. Dozier
C. F. Gibson
G. C. Perkins
R. Q. Ranson
F. V. Tribble
T. E. White

STANDARD CHEMICAL PRODUCTS, INC. (76-77)
1301 Jefferson St., Hoboken, N. J.
Features an apparatus for measuring static in running yarn, resins, dye fixatives, coning oils, dyeing assistants and wetting agents, finishes, resins, softeners, and fabrics and yarns treated with these products.
Representatives at booth:
L. L. Grombacher
A. H. Kramer
E. Pickup
J. J. Bloetjes
J. M. Myers
J. H. Callicott
M. Einstein
L. C. Greene
L. M. Hamblen
A. E. Hirst

TENNESSEE CORP. (44)
601 Grant Bldg., Atlanta, Ga.
Features acids, copper catalysts, detergents, mildewproofing chemicals, reducing agents, water-treatment chemicals, and wetting agents.
Representatives at booth:
C. H. Bronson
F. G. Calkin
W. E. Tiller
W. P. Williams

TEXTILE AGE (66)
22 W. Putnam Ave., Greenwich, Conn.
Features a textile publication.

TEXTILE INDUSTRIES (88)
806 Peachtree St., N. E., Atlanta, Ga.
Features a textile publication.

TEXTILE WORLD (45)
201 E. Coffee St., Greenville, S. C.
330 W. 42nd St., New York, N. Y.
Features a textile publication.
Representatives at booth:
E. D. Fowle
P. M. Thomas
J. H. Kennedy
M. London
R. W. Pinault
D. H. White
W. G. Ashmore
J. C. White, Jr.

UNITED STATES TESTING CO. (22-23)
1415 Park Ave., Hoboken, N. J.
Features a sample display of defects, testing instruments, photographs, and descriptive literature of the company's testing and research facilities.
Representatives at booth.
H. M. Block
F. L. Fish
W. F. Morgan
F. P. Brennan
A. J. Kellner
G. B. Acton
E. C. Cox, Jr.
I. J. Yocum, Jr.

VERSENES, INC. (53-54)
875 Waverly St., Framingham, Mass.
Features the Versenes.
Representatives at booth:
J. J. Singer
R. K. Bersworth
T. J. Sheehan
A. J. Gard

VIRGINIA-CAROLINA CHEMICAL CORP. (71-72)
99 Park Ave., New York, N. Y.
Features fabrics, garments, and new fabric developments. A new high-crimped fiber will also be on display.
Representatives at booth:
J. H. Karrh
J. F. Yeates
L. Billings
W. Backus
R. H. Stinnette

VIRGINIA SMELTING CO. (59-60)
West Norfolk, Va.
Features textile chemicals and the Nadeau loom.
Representatives at booth:
A. K. Scribner
R. H. Israel
H. B. Channon
J. G. Todd, Jr.
R. E. Thompson
T. T. Allan
J. R. Eldridge
J. B. Johnson
H. B. Peterson
E. W. Keys

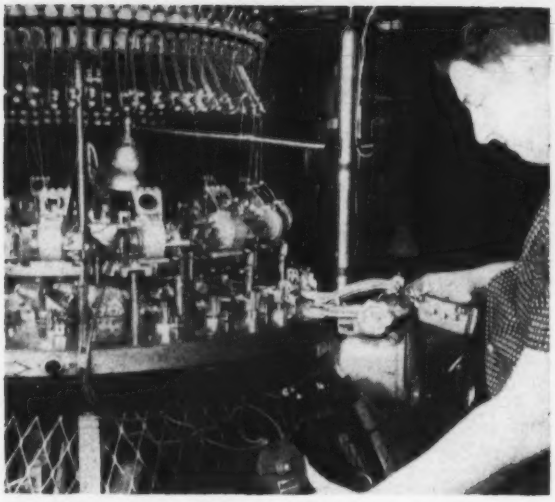
JOHN WALDRON MACHINE CO. (15)
New Brunswick, N. J.

WALLERSTEIN CO., INC.(70)
180 Madison Ave., New York, N. Y.
Features desizing compounds.
Representatives at booth:
J. A. Clark
F. A. Taberski
J. J. Casserly
J. C. Robertson

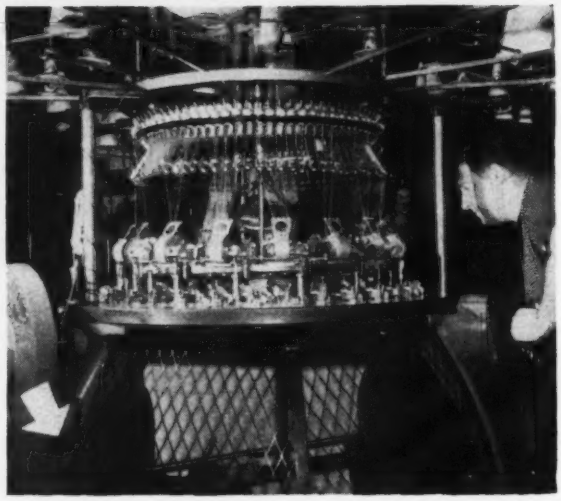
WICA CHEMICALS, INC.(56)
Old Concord Rd., Charlotte, N. C.
Features Wicaloids, a group of synthetic- and natural-rubber latices for coating, impregnating, and laminating fabrics and fibers.
Representatives at booth:
W. C. Caldwell
J. C. Boesch
J. E. Kerr
R. O. Simpson

EDWIN L. WIEGAND CO.(83)
Pittsburgh, Pa.
Features radiant heaters.

JACQUES WOLF & CO. (61)
350 Lexington Ave., Passaic, N. J.
Features chemical specialties for processing textiles.
Representatives at booth:
G. J. Desmond
W. Deuble
C. R. Bruning
G. W. Apsey



MAGNETIC LATCH OPENER is fixed at No. 4 feed on this Supreme machine. Stanley Soowal points out the pattern-chain control (right) and the rectifier (left).

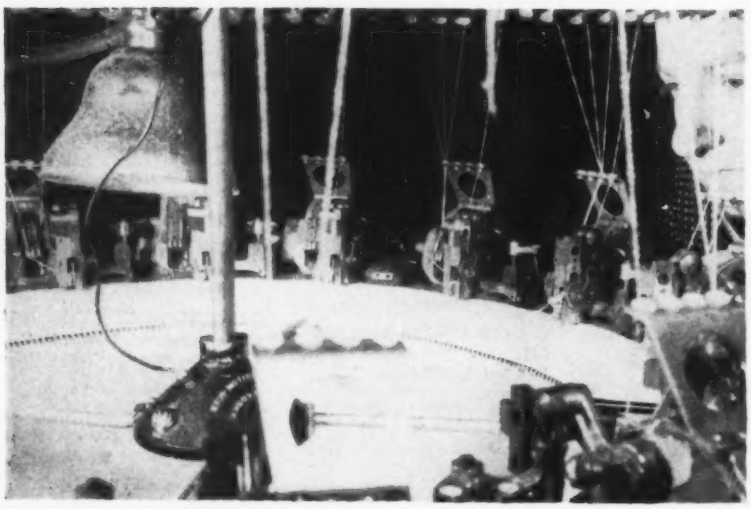


MERCURY SWITCHES on the knock-off lever (arrow) and the pattern-chain control prevent the magnet from overheating if the machine stops in the cast-off course.

MAGNETIC LATCH OPENER
Aids Jersey-Garment Knitting

▶ In action for one revolution in each garment length, this electrically operated latch opener has been operating successfully for three years

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD



SELVAGE EDGE is made by casting off alternate stitches on No. 4 feed and feeding three ends of rubber at No. 6 feed. A separating thread is knitted at No. 2 feed.

TO MAKE GARMENT LENGTHS on a circular jersey machine, alternate needles must cast off their stitches. To solve the problem of opening the latches after the cast-off, Soowal Knitting Mills, Philadelphia, Pa., uses an electromagnetic latch opener.

This latch opener has been found far superior to the mechanical type of latch opener, which often broke needles and required constant checking for correct adjustment. The new latch opener has operated successfully for three years with a minimum of maintenance, and so far there have been no ill effects from magnetized latches.

The latch openers are fixed to Supreme SA ROF machines. A finished selvage edge is made parallel to the courses. After pull threads are removed, the fabric lengths are made into children's romper garments.

The Supreme machines have 26-in.-dia. cylinders with 32 feeds. There are four-color striper boxes at 16 of the feeds.

Magnet Was Made in Mill

The magnet for the latch opener was made in the mill shop because an electromagnet could not be found to

CONTINUED ON PAGE 238

A $929 idea —*

Automatic SCREEN WASHER For Air-Changing Unit

▶ For $103 per unit, Reigel Textile Corp. has installed mill-made automatic washers for water-filtering screens. Screen cleaning was formerly done every 4 hrs. Now it's every 120 hrs.

By W. C. WESTBROOK Consulting Editor, TEXTILE WORLD

AUTOMATIC WASHERS for the water-filtering screens of air-changing units at Riegel Textile Corp., Trion, Ga., have reduced manual screen-cleaning time from twice a shift to once a week.

A washer is mounted on the front of the return-water trough of each air-changing unit. Total cost of each washer —materials, labor, and installation—was $103.

How the Washer Is Made

A 1½-in. water pipe is mounted in brackets on the front of the water trough and caused to oscillate parallel to the screens.

Three or four nozzles are mounted in the pipe and perpendicular to it so that they aim at each screen. A two-screen unit has eight nozzles, and a six-screen unit has 18 nozzles.

A ⅓-hp. electric motor with a gear reducer supplies the force that moves the nozzle-fitted pipe back and forth in front of the screens. The mill-made gear reducer cuts the speed from 1,725 to 5 rpm.

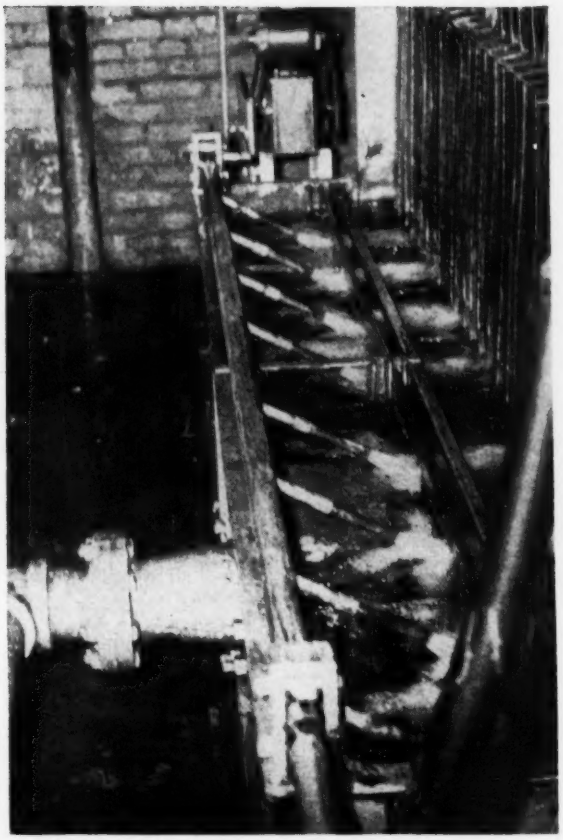
The nozzles are made from ⅜-in. pipe and are flattened on the end to spray a 4-in. band of water against the screen at 15 lbs. pressure. The spray prevents lint and trash from sticking to the screen and causes such foreign matter to fall to the bottom of the trough, which is cleaned out periodically.

A rubber hose provides a flexible coupling between the feeder pipe and the pump outlet. On large units, a booster pipe extends to the opposite end of the feeder pipe to increase water pressure.

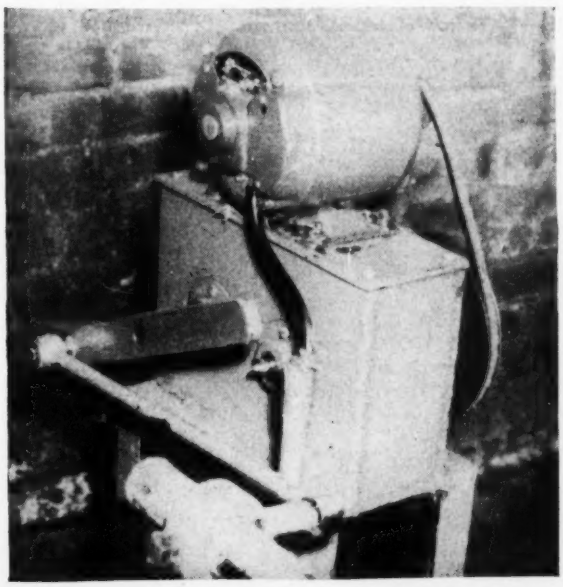
All parts except the motor were made in the mill's machine shop.

All 13 air-changing units at the mill are now equipped with the automatic washers, which have been in service for more than a year without any trouble.

**The washers were built as a result of a suggestion submitted by Air-Conditioning Supervisor Davis Bartlett through the company's suggestion system. Mr. Bartlett received an initial award of $25 and an additional $904 from savings after the washers had been in use for a year.*



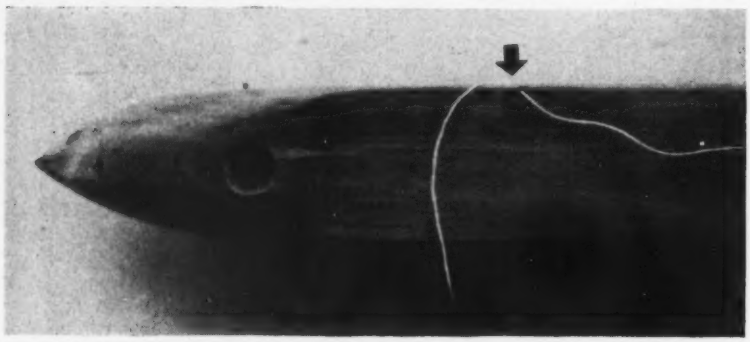
NOZZLES IN FEEDER PIPE oscillate in front of the screens and prevent dirt from accumulating on them. Dirt is scooped from the trough bottom once a week. There are three or four nozzles for each screen, depending on the number of screens.



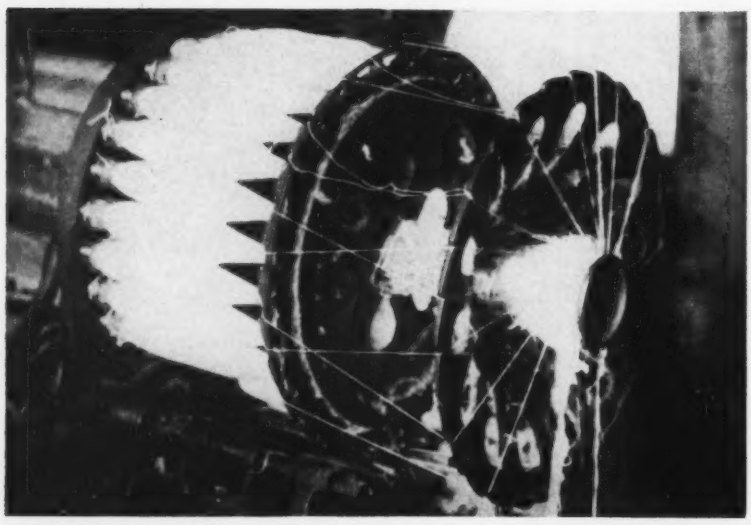
MOTOR is ⅓ hp. and moves the feeder pipe back and forth. Gear reducer reduces speed to 5 rpm., and a rubber hose connects the feeder pipe with the main line.

Four Ways to Reduce

CROOKED BOBBIN causes the filling to pull off unevenly. The result is broken picks. The bristle is too long and will also break the filling.



SPLINTERED SHUTTLE hangs the filling and breaks it. All shuttles should be kept sanded and smooth. The cause of nicks and scars should be removed.



SLOVENLY BATTERY FILLING is one of the main causes of broken picks. Battery filling is usually better than this, but any of the pictured faults is serious.

▶ Fifty or more faulty conditions can cause broken picks. But four precautions in loomfixing can reduce and all but eliminate most of the faulty conditions.

By WILMER C. WESTBROOK
Consulting Editor, TEXTILE WORLD

THE MOST PREVALENT MAJOR DEFECT in drills, twills, sateens and gabardines is the broken pick or mispick. This defect is found in all woven fabrics but is not so pronounced and noticeable in plain weaves. The defect not only makes a blemish but also weakens the cloth. It may be only a few inches long or may extend the full width of the cloth.

Although a misplaced pick of filling gives practically the same appearance in the cloth as a broken pick, such defects are usually classed as overshots, undershots, harness balks, and shuttle marks. It is hard to completely eliminate broken picks because there are so many things to cause them. A loomfixer, when checking a loom causing this defect, must have a checklist of about 50 items. Any one or a combination of two or more of the items may be causing the trouble.

The number of broken picks can be reduced by:

1. Using good, uniform filling yarn spun on straight, unscarred bobbins.
2. Setting loom motions so that the shuttle will be picked smoothly and easily.
3. Setting and timing the battery correctly.
4. Eliminating all rough surfaces, projections, and unnecessary friction that will bruise, cut, or break the filling yarn.

Eliminate Bobbin Defects

A warped or crooked bobbin will cause the filling yarn to break. A rough or splintered surface of the bobbin will catch the filling yarn and break it. Loose rings will let the bobbin sag in the shuttle so that the filling yarn is frayed and weakened by contact with the warp yarn or the lay-end plate. A bobbin not held straight in the shuttle causes strain to be placed on the

BROKEN PICKS

filling yarn as it passes over the end of the bobbin.

Spinners also cause many mispicks by piecing ends incorrectly or by leaving slubs or gouts in the filling bobbins.

When looms are changed to use longer bobbins and larger filling-yarn packages, the number of broken picks is increased. The increase is natural because the extra length and weight magnify many of the above causes of broken picks.

Keep Shuttles Smooth

The shuttle should be kept perfectly smooth and free of splinters. A small rough place on the back of the shuttle will break or bruise the filling yarn. During the pick, the strand of filling yarn is over, under, and even behind the shuttle.

A good groove in the front of the shuttle will help hold the yarn in place but will not completely control it.

The shuttle spring or clip should be kept tight. The clip should be replaced when it becomes worn enough to let the bobbin sag. When side sway and vibration of the bobbin are present, the clip should also be replaced. The strain and wear on the clip is much worse when a long bobbin and large yarn package are used.

Sufficient tensioning material such as bristles, fur, wool, or felt should be placed in the shuttle. The type and amount of tensioning material is dependent on many factors including the filling yarn number, the turns per inch, the speed of the loom, the relative humidity, and other local conditions. The main purpose of most tensioning material is to keep the ballooning of the yarn to a minimum and to control kinky and sloughed-filling defects.

Examine Eyes Closely

The shuttle eye should be of the correct design for the weave and the loom. It should be smooth and tight. If the eye is loosened or removed, be sure there are no cracks or rough places between the eye and the shuttle when it is retightened. A small chipped or rough place inside the eye (too small to be seen without a close examination) will sometimes cut the filling yarn.

Each shuttle should be taken from the loom and examined closely for cracks, splinters, roughness, and other defects at least once every 120 hrs. of running time. The life of the shuttle can be greatly increased if the cause of any nicks, scars, and roughness is traced and eliminated. While the shuttle is out of the loom, the eye and spring should be tightened, any rough place sanded smooth, tensioning material cleaned or replaced, and a coating of tallow or commercial shuttle dressing applied.

Set Batteries Correctly

Much of the filling-yarn breakage occurs during the transfer of a bobbin from the battery to the shuttle. To minimize breakage, keep bobbins free of loose strings and wrap the filling securely on the thread holder after the yarn is laid on the thread guide.

The small end-disk bobbin holders and springs should be in good condition to hold the bobbin firmly and release it smoothly. The holdback pawl should be set so that there is about $\frac{1}{32}$ in. clearance between the tip of the pawl and the tooth of the bobbin-disk gear; the feed pawl should engage a tooth of this gear and hold it firmly.

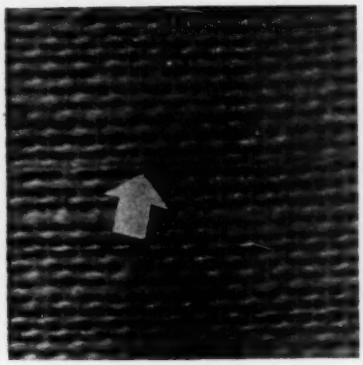
The shuttle should be positioned in the box under the battery so that the bobbin will enter it without rubbing or rolling against the sides. With the transferrer latch finger engaged and the lay in front-center position, the transferrer should clear the rings of the bobbin in the shuttle by $\frac{1}{32}$ in. to $\frac{1}{8}$ in., depending on the speed and model of the loom.

There should be a slight clearance between the tip of the shuttle spur and the point of the shuttle feeler.

The filling feeler, the shuttle feeler, the Stafford thread cutter, and other related parts of the filling-changing mechanism should be set to operate correctly and freely. If the filling-changing mechanism is operating correctly, filling yarn will not be exhausted before it is replenished; and false changes will be avoided.

When the battery is moved, use a set of battery gauges to reposition it.

When looms are equipped with side-fork filling motions, the grates should always be kept clean. The prongs should center the openings of the grate and should project $\frac{1}{32}$ in. back of the grate with the lay at the front-center position.



BROKEN PICK in a plain two-harness weave shows as a double pick, and a thin streak is usually present to add to the seriousness of the defect.

All connections should be tight so that the loom will be stopped instantly when the filling yarn breaks or is exhausted. The filling-motion hook should be timed so that the hook begins to move forward just as the filling fork presses the strand of filling against the grate. An improperly set or timed fork will fail to stop the loom when the filling yarn breaks or is exhausted and will actually break or cut the yarn.

Center-fork filling motions should be checked periodically. When major adjustments are necessary, the fork should be reset with a gauge. Gauge settings are made more easily and accurately when the warp is out of the loom. A short piece of reed should be positioned at the center of the lay to hold the shuttle in position to adjust the center-fork prong holder.

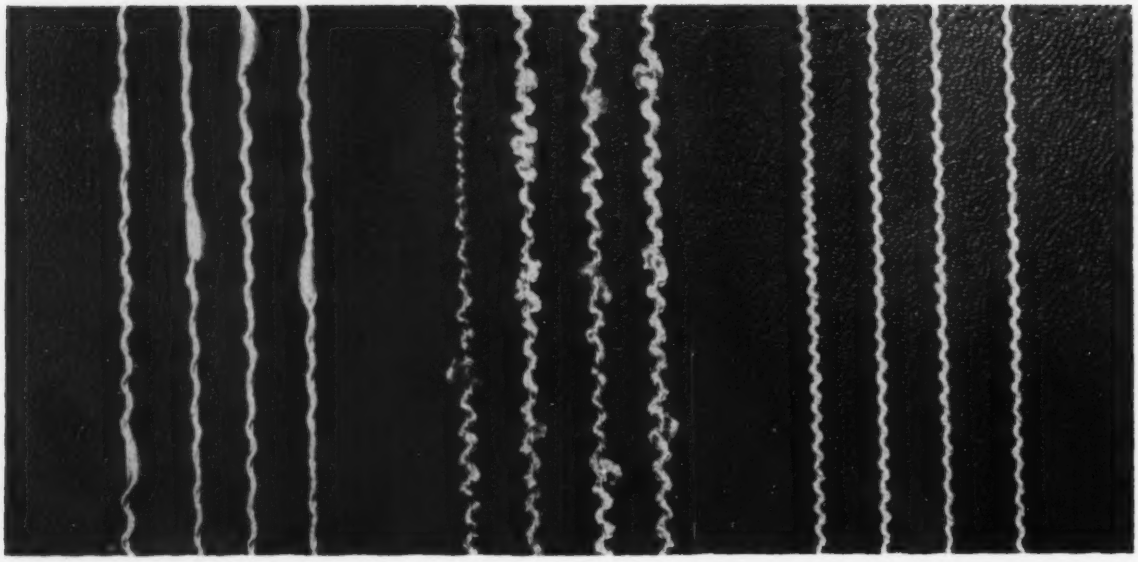
The center fork seldom breaks the filling yarn, but it should be kept in good condition to stop the loom on the first pick when the filling yarn breaks or runs out.

Our tests have shown that cloth woven on looms equipped with center forks contain about one-third fewer broken picks than similar cloth woven on side-fork filling-motion looms operated at the same speed.

Maintain Picking Motions

The picking motion should be set and timed so that the shuttle moves freely and smoothly across the lay. A pick cam timed late, or one that does not have the pick-cam toe aligned correctly with the pick ball, causes

CONTINUED ON PAGE 244



NOVELTY YARNS are varied by chain setup, yarn number, and spindle and roll speeds. From left to right are nub, ratine, and boucle.

How Lorraine Makes Three NOVELTY YARNS

- Nub yarns are made with irregularly rotated top rolls
- Ratine yarns are made with fast bottom rolls
- Boucle yarns are made with S- and Z-twist yarns

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

OF THE WIDE VARIETY of novelty yarns produced by Lorraine Yarn Mills, Inc., Philadelphia, Pa., three popular numbers among weavers and knitters this year are nub, ratine, and boucle yarns. Here's how Lorraine produces these three types of yarns.

The yarn arrives from the yarn manufacturer on tubes. The tubes are placed on a creel over the twister frame. The creels hold up to 2,000 lbs. of yarn, and the yarn packages are supported on nearly horizontal spindles in rows five deep.

Doffs Are Kept Equal Size

The novelty twisters, made by Collins Bros. Machine Co., have 200 spindles each. One girl tends one frame, but she receives help from other operators to doff. A counter driven from the ring rail keeps doffs of equal length and warns the operator of the doffing time.

Spindle speed is about 4,000 rpm. The yarn is twisted on double-end bobbins. The ring diameter is 3½ ins. The ball-bearing spindles are oiled once each week.

Each frame is driven by a Cleveland Electric motor through a five-ply V-belt. The motor is bolted to a specially constructed frame. When a frame-speed change is required, the frame pulleys are changed and the motor is raised or lowered by adjusting the bolts.

Yarn constructions are worked out prior to twisting by Superintendent A. LaPierre. He determines the yarn numbers, spindle speeds, roll speeds, and chain arrangement at his desk.

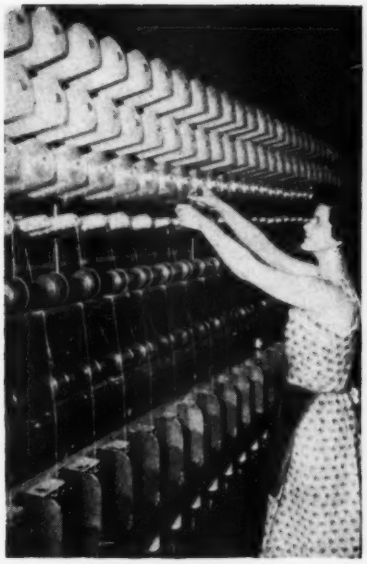
Nub Yarn Is Rayon and Cotton

One popular nub yarn is made from 900-den. rayon and 20s cotton. The finished size of the yarn is 1,250 yds. per lb. Two ends of 20s cotton are fed to the top rolls, and the 900-den. yarn is fed to the bottom rolls. The top roll is driven by a clutch that has an intermittent action. The clutch is controlled from a chain, which has high and low links. A high link on the chain stops the shaft.

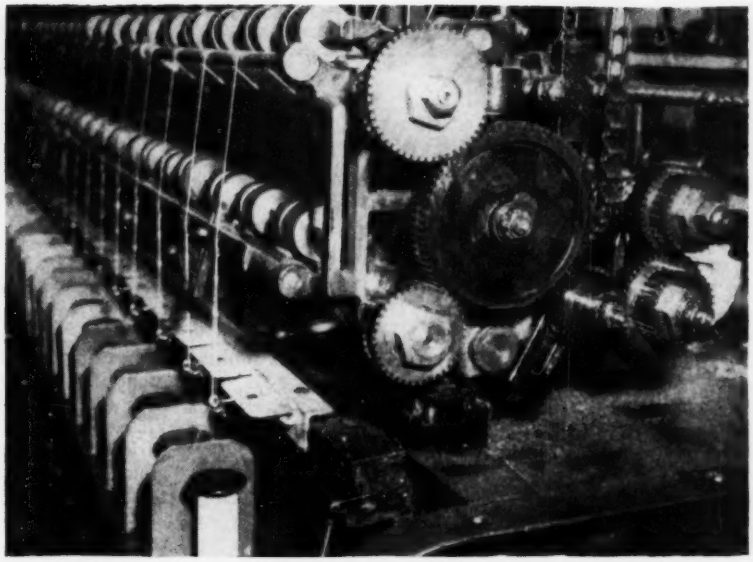
The links are arranged to space the nubs at irregular intervals to prevent patterns in the cloth woven or knitted from the yarn. One nub is made approximately each second.

The top roll runs the full width of the frame and drives individual rolls that rest on plain bearings. A separator bar controls the yarn and prevents the twist running back to the supply package.

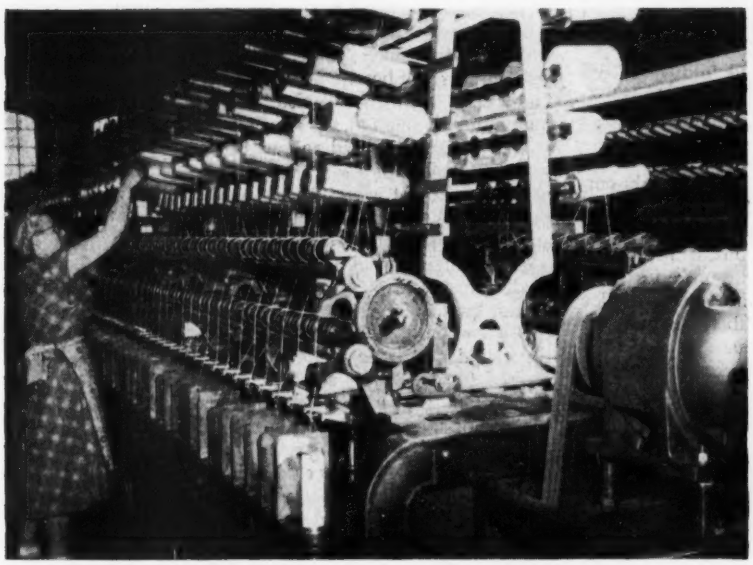
The nubs in the nub yarns are locked in position on a fancy twister frame with 300-den. rayon. The nub yarn is fed to the top rolls, and the rayon is fed to the bottom rolls. The rayon-yarn cones are positioned on the creel with adapters that slide on the creel pins. Speeds of the top and bottom rolls are identical.



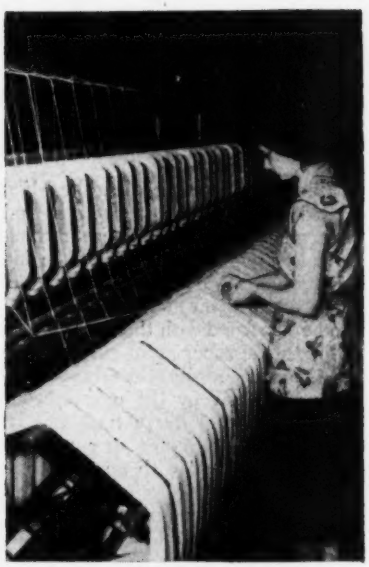
CREEL on 200-spindle novelty twister frame holds 2,000 lbs. of yarn in rows five deep.



NUB YARN is made with intermittent motion of the top roll. The motion is controlled from the chain.



NUBS are locked in position with 300-den. rayon on this frame. Both rolls are of equal speed. The nub yarn is fed to the top rolls.



SHIELDS between bobbins on skein winder prevent yarn tangling.

Ratine Is Heavy Yarn

One ratine yarn is made with two ends of 20s cotton yarn and two ends of 900-den. rayon. The bottom roll is driven twice as fast as the top roll. The loops in the yarn are formed on the nubbing bar.

A worsted boucle yarn used for knitting is made from two ends of 20s yarn. The bottom rolls turn twice as fast as the top rolls.

S-twist yarn is fed to the top rolls, and Z-twist yarn is fed to the bottom rolls. The resultant yarn number is 7s worsted.

All yarn is then wound from the double-end bobbins into skeins for dyeing. Each reel winds 25 to 40 skeins. The reels rotate about 200 rpm.

The four skein winders are tended by four girls who work as a team when the skeins are ready to doff or new bobbins are to be tied on. As each bobbin contains an identical amount of yarn, the bobbins all run out at one time. Two bobbins are required to make one skein; so very little waste is made.

Shields between bobbins prevent flying yarns from tangling. The yarn is traversed over the reel, and a lease is made on each skein.

After dyeing, the yarn is returned to the mill and wound onto cones or tubes.

The mill, which has 4,000 twister spindles, 500 reeling spindles, and 400 winder spindles, produces 35,000 to 40,000 lbs. of novelty yarns weekly, working on a three-shift basis.

How Laboratory Tests Measure

- **The Micronaire is established as a valuable tool to measure fineness**
- **The Colorimeter is important where color is a quality factor**
- **The Pressley instrument is more accurate than the classer in measuring strength**

BECAUSE THE CLASSER'S ABILITY to recognize cotton character is less perfect than his ability to evaluate grade and staple length, laboratory tests have become very helpful. Accurate measurements of fineness, strength, and color are definitely related to processing characteristics.

Here are a few helpful facts to keep in mind in using the Micronaire, the Colorimeter, and the Pressley tester.

Fineness Can Be Misleading

Fineness, as measured by the Micronaire, is highly correlated with neps in the card web and ASTM yarn-appearance grades; but Micronaire readings are influenced by several factors that must be taken into consideration. Actually, the Micronaire measures only the pressure drop or resistance to air flow in a plug of cotton. This resistance can be associated with the fineness of the fiber, but there are limits to the accuracy of such comparison.

Micronaire readings are influenced by the heavy trash and particularly by the moisture content of the sample. The influence of heavy trash can be reduced by pulling out sticks, heavy motes, or anything of that nature. Care must also be used with sandy cotton because sand affects the weight to the extent that the reading can be changed by 0.5 or more. The moisture content of the cotton affects the Micronaire readings if the relative humidity is above 80% or below 40%.

The shape of the fiber and its cross-sectional diameter also affect Micronaire readings. The diameter of the cotton fiber varies from one end of the fiber to another and from one variety to another, but the variations between varieties of the same staple length are rather small. The Micronaire reading can be used to evaluate cell-wall thickness of American upland cotton if staple length is known. Average fiber diameter is sufficiently correlated with staple length to permit the use of the Micronaire in merchandising and mill operation as an estimate of cell-wall thickness.

Based on a paper presented by Earl E. Berkley, Anderson, Clayton & Co., Inc., at a Chattanooga meeting of the American Society for Quality Control

Varieties such as Hopi Acala and Triple Hibred do not fit into the upland-type cotton although they have at least one parent in the upland group. They have small diameters and relatively thick cell walls and must be classed in a group by themselves. Similarly, the long-staple cottons such as Sea Island, Egyptian, American-Egyptian, Peruvian Pima, and certain exotic cottons from the Sudan and Africa must be evaluated on a separate basis. Within this group, however, the cell-wall thickness can be estimated reasonably accurately with the Micronaire.

Watch Thick Fibers and Decay

Micronaire readings are also influenced by the distribution of thick-walled fibers in the mass. Suppose that 50% of a sample is fully matured, open-boll cotton that is thick walled and coarse; and suppose that the other 50% of the mass tapers off to very thin-walled, immature cotton killed by frost. If the mixture is rather uniform, the thick-walled cotton may influence the Micronaire reading to show a coarser fiber than is expected from the weight per inch. This mixture will also spin better than a less intimately mixed mass of fibers of the same general structure.

The Micronaire reading can be trusted to indicate the spinning quality of a sample, regardless of the fiber weight per inch, except when there is damage from biological decay or other disintegration that influences the strength and elastic behavior of the fiber.

Even microbiological decay influences the Micronaire reading in that the cotton is less resilient than undamaged cotton and therefore tends to pack against the head of the Micronaire. When the plug of cotton is placed in the cylinder and the plunger is inserted, the mass is compressed to a relatively small volume. As this compression is effected, the cotton tends to pack against the head because of side-wall friction in the cylinder.

The amount of packing is in proportion to the resiliency of the fibers. A dead fiber with little or no resilience packs more than a resilient fiber. Extremely thin-walled cottons have little resilience and tend to pack badly against the head. The resistance to air flow goes up, therefore, more rapidly than the drop in weight per inch. Similarly, fiber damaged by microbiological decay or other disintegration tends to lose its resilience and packs against the head to give a lower Micronaire reading than would be expected from the weight per inch.

Barring these limitations, the Micronaire is the best single instrument available for routine testing, and data from it furnish more information on the use value of the cotton than do those from other tests.

Three Factors Influence Color

The second-best instrument available for evaluating cotton fibers is probably the Nickerson-Hunter Cotton Colorimeter. The data from the Colorimeter, however, are not

COTTON CHARACTER

as valuable as those from the Micronaire. Furthermore, color can be more accurately estimated by classers than can fineness. So it is less important to measure color than fiber fineness For highly specialized uses where color is a quality factor, however, the Colorimeter is extremely important.

Three major factors influence color in cotton: ageing, chemical composition, and microoganisms.

1. Ageing brings yellowness to any cotton, regardless of its origin. Shirts, sheets, and other bleached fabrics also tend to yellow. And yellowing is not limited to cotton: any cellulosic fiber, including rayon, tends to yellow with age. Even the synthetic fibers tend to yellow with age. This yellowing is not a sign of poor quality, because extra-white cotton that is classed as Middling when ginned often passes as Strict Middling after yellowing. One reason for this is that the yellow color tends to hide a certain part of the trash. For this reason, the official standards for grade are difficult to match in new-crop cotton because the standards are of necessity made of cotton one to three years old. It takes that long to get them developed and accepted.

2. Nitrogenous materials and carbohydrates in the protoplasm are another cause of color. If cotton is killed outright either by insects or a freeze, the living protoplasm is rich in carbohydrates, proteins, etc. As this mass of unused food ages, it tends to stale just like any other organic material of that type. If the fiber is very immature, i.e., if the bolls were killed while they were quite green, there is considerable odor to the cotton from the materials left in the protoplasm.

These materials tend to color on ageing and give the cotton the so-called "red" color that has been associated with low-quality cotton. Since this color is associated with the protoplasm and not the cell wall, it has little to do with the quality of the fiber except that it occurs in immature cotton; and immature cotton can be very thin-walled and, therefore, fine as measured by the Micronaire. If, however, the cotton is approaching maturity and the cell-wall thickness is sufficient to give a good resilient fiber, the cotton may be just as good for some fabrics as white cotton.

When cotton plants are defoliated by using chemicals, by taking the leaves off mechanically, by frost or insects, or by some other means, the manufacturing system of the plant is destroyed and the bolls have no source of manufactured foods. The supply in the protoplasm is soon used up, therefore, and the fiber ceases to grow in cell-wall thickness and finally opens abnormally.

Fiber treated in this way is white, however, and not red; but it may be quite fine as shown by the Micronaire. Such fiber is considered immature and gives trouble in spinning, dyeing, and finishing. So red color cannot be trusted to indicate the use value of the cotton. For many cotton mills the Micronaire test is more valuable than the Colorimeter test.

3. Field damage from microorganisms is another source of color in cotton. Cotton fibers, being organic materials, decay when kept moist and warm for very long. Fungi that grow on the cotton fibers develop black, blue, pink, or red spores. The color of the spores tends to change the over-all color of the cotton.

Gray cotton, therefore, may be caused by the growth of the microorganisms on the cotton. Blue stain is frequently from spores in the lumen of the fiber; they shine throughout the fiber and give it the grayish-blue stain effect. Detection of gray cotton is extremely important in the use of the fibers. Color from the growth of microorganisms may not bleach out with ordinary bleaches used in finishing and must not be confused with the color from ageing or sugar, etc.

Cotton exposed to light for extended periods also becomes damaged, and this damage can be recognized within limits by loss of sheen. Fiber also loses sheen when treated with chemicals such as the wetting agents used in pickers and sometimes in ginning. The loss in sheen is usually not sufficient to materially reduce the grade of the cotton unless it is seriously damaged. There are other color changes that may or may not be important to the use value of the cotton, depending on its ultimate use.

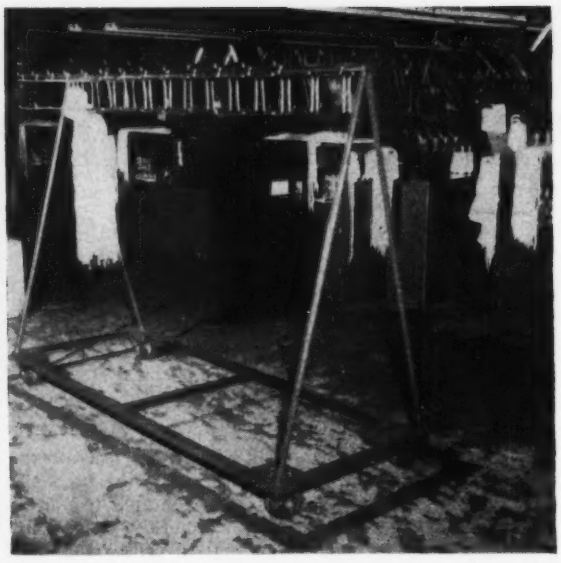
The Colorimeter picks up changes in brightness from loss in sheen or grayness, but the presence of leaf trash in the sample affects the reading in the same way as gray fiber. It is necessary, therefore, to differentiate between dirty cotton and cotton with gray or dull fiber when the Colorimeter is used.

Strength Sometimes Critical

Another instrument for testing cotton fiber is the Pressley strength tester. The instrument defies all of the laws of good instrumentation; but if checked often enough, it still gives reasonably good results. Fiber strength is less important than fiber fineness from the point of view of manufacturing and certainly gives less trouble in finishing. It is probably more important than red or yellow color, except when the fiber has been damaged. Above-average fiber strength is needed for certain fabrics and is an asset in manufacturing. For this reason, many mills are willing to pay a slight premium to get good, strong, bright fiber.

Value of the Pressley instrument is greatly enhanced by modifying it to permit a more-uniform level of test and more-rapid operation. In years when the fiber is unusually weak in some areas, it is extremely important for a mill to know when it is receiving low-strength fiber so that such fiber can be blended with strong fiber to keep yarn and fabric strengths high. Strength cannot be accurately evaluated by a classer because variations in fineness tend to be deceptive. Coarse fibers appear strong because the fibers are individually stronger than fine fibers. The coarse cotton may not be stronger, however, in the yarn or fabric.

STOCKINGS from 75-gauge machines are rolled at the welt and tied loosely in the afterwelt when they are removed from the knitting machine.



MILL-MADE RACK holds the production of seven or eight knitting machines. Painted marks on the floor help keep the racks in the alley center.

How Claussner Hosiery Co. MENDS and INSPECTS 20% Faster

A good handling system and modern equipment for nylon hosiery have raised—

- **Gray inspection to 220 doz. per operator per shift**
- **Pull-thread mending to 50 doz. per operator per shift**

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD

MENDING AND INSPECTING production of full-fashioned hosiery has been increased at Claussner Hosiery Co., Paducah, Ky., without impairing quality. The mill uses a system that incorporates special handling equipment, automatic inspecting machines, and iron attachments on pull-thread-mending machines.

Four 75-gauge machines have recently been installed in the mill. The yarn used on these machines is 10 den., and these fine-gauge stockings are processed through the system with other styles.

When stockings are removed from the knitting machine, they are tied in 1-doz. bundles. The welts are rolled to prevent wrinkles, and a length of soft waste is tied loosely around the afterwelt.

The knitter hangs the bundles on portable racks in the center aisle. Eight racks service the 42 knitting machines. Painted rectangles in the aisle help keep the racks in position.

Racks Hold 156 Doz. Hose

The racks have 26 pegs projecting from a center cross piece supported on two V-shaped end members. The bundles are slipped on stainless-steel handling devices hanging by two screws from each peg. Each handling device holds six bundles.

The racks are on casters, and they are moved from the knitting room at the end of each shift. The handling devices are transferred to a broader rack made to the dimensions of the presetting box.

The ends and cross pieces of this rack are made from 1-in. stainless-steel angle stock. The lower framework is 2-in. angle iron. The racks are welded and made in the mill machine shop.

This rack has 20 projecting rods, but the rods are wider; and two handling devices slide on one peg.

Preset in Separate Rooms

The Lydon box for presetting is in a small room off the seaming room. The doors of this room are kept closed during presetting to prevent interference with the air-conditioning system in the seaming room.

An exhaust fan in the conditioning room is switched on to remove the hot air before the operator enters the room to unload the box. Presetting is done at 205° F. dry-bulb and 190° F. wet-bulb temperature for 55 mins.

The stockings are removed from the racks by the floor girl, who allots each style to certain seamers. Some girls

PRESETTING CABINET is in a small room off the seaming room. Exhaust fan removes hot air; so escaping heat does not interfere with the air-conditioning system.

CHUTE on seaming machine is made from stainless steel and allows stockings to drop into the tray. The welts are kept level in the tray with seams on one side.

seam only 75-gauge stockings, and some girls seam only black-heel stockings. A cloth-covered steel rack on the seaming machine holds 3 doz. stockings at the seamer's right.

Seamers Keep Welts in Line

A stainless-steel chute screwed to the front of the seaming machine guides the stockings to the inspector's tray when they are seamed. The stockings are arranged in the tray with the seams to the left and the welts facing the seamer. The welts are smoothed out flat, and the top edges of the welts are lined up.

Up to 20 doz. stockings are placed in one tray. These trays are delivered to the Sotco automatic inspecting machines, where two trays are placed on the inspecting-machine elevator.

The elevator is automatically adjusted by the operator to the best working position. She reaches for the top stocking, draws it on the form, and presses the foot pedal to start the inspecting cycle.

Inspection by the operator follows expansion of the form; and the stocking is stripped from the form, turned, counted, and placed in the dye bags for Dunn-system dyeing. These operations are all automatic. Each operator is supplied with four frames with hinged tops for holding the plain muslin dye bags, which are preferred for the dyeing operation. These bags are looped over the hinge and pushed under the inspecting-machine delivery chute.

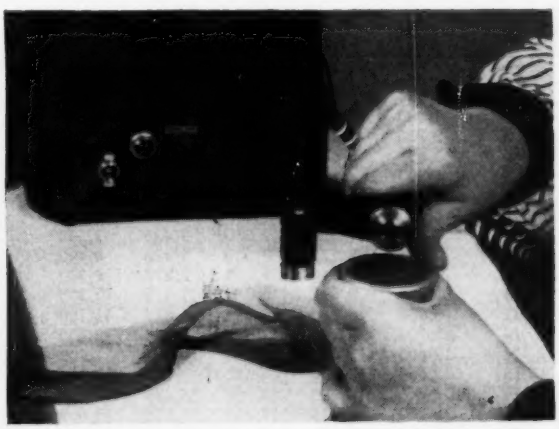
Signal Indicates Completion

A green light flashes when the bag has received 3 doz. stockings. The operator closes the bag with string and attaches a ticket to the string. The bags are then dropped in a tote box to be delivered to the gray stock room.

The operator presses a button on the control panel when she discovers

CONTINUED ON PAGE 258

WELTS in line and seams on one side help this operator inspect 220 doz. stockings daily. The stockings drop into plain muslin dye bags in 3-doz. lots.



IRON ATTACHMENT on pull-thread mender is passed over the repaired pull thread to set the stitch. Quality is improved, and production is 50 doz. daily.

Tables Speed Calculations For DOFF LOAD

► These doff tables cover spindle loads from 35,000 to 40,000 spindles. To calculate doff load, find the proportional spindle load for your doff interval; then divide this spindle load by spindles per side or frame.

By MARCUS C. GROSS

35,000-Spindle Doff

Doff interval Hrs. ↓	Mins. →	5	10	15	20	25	30	35	40	45	50	55
	Spindles											
–	–	–	–	219	292	365	437	510	583	656	729	802
1	875	948	1,021	1,094	1,167	1,240	1,312	1,385	1,458	1,531	1,604	1,677
2	1,750	1,823	1,896	1,969	2,042	2,115	2,187	2,260	2,333	2,406	2,479	2,552
3	2,625	2,698	2,771	2,844	2,917	2,990	3,062	3,135	3,208	3,281	3,354	3,427
4	3,500	3,573	3,646	3,719	3,792	3,865	3,937	4,010	4,083	4,156	4,229	4,302
5	4,375	4,448	4,521	4,594	4,667	4,740	4,812	4,885	4,958	5,031	5,104	5,177
6	5,250	5,323	5,396	5,469	5,542	5,615	5,687	5,760	5,833	5,906	5,979	6,052
7	6,125	6,198	6,271	6,344	6,417	6,490	6,562	6,635	6,708	6,781	6,854	6,927
8	7,000	7,073	7,146	7,219	7,292	7,365	7,437	7,510	7,583	7,656	7,729	7,802
9	7,875	7,948	8,021	8,094	7,167	8,240	8,312	8,385	8,458	8,531	8,604	8,677
10	8,750	8,823	8,896	8,969	9,042	9,115	9,187	9,260	9,333	9,406	9,479	9,552
11	9,625	9,698	9,771	9,844	9,917	9,990	10,062	10,135	10,208	10,281	10,354	10,427
12	10,500	10,573	10,646	10,719	10,792	10,865	10,937	11,010	11,083	11,156	11,229	11,302
13	11,375	11,448	11,521	11,594	11,667	11,740	11,812	11,885	11,958	12,031	12,104	12,177
14	12,250	12,323	12,396	12,469	12,542	12,615	12,687	12,760	12,833	12,906	12,979	13,052
15	13,125	13,198	13,271	13,344	13,417	13,490	13,562	13,635	13,708	13,781	13,854	13,927
16	14,000	14,073	14,146	14,219	14,292	14,365	14,437	14,510	14,583	14,656	14,729	14,802
17	14,875	14,948	15,021	15,094	15,167	15,240	15,312	15,385	15,458	15,531	15,604	15,677
18	15,750	15,823	15,896	15,969	16,042	16,115	16,187	16,260	16,133	16,406	16,479	16,552
19	16,625	16,698	16,771	16,844	16,917	16,990	17,062	17,135	17,208	17,281	17,354	17,427
20	17,500	–	–	–	–	–	–	–	–	–	–	–

36,000-Spindle Doff

Doff interval Hrs. ↓	Mins. →	5	10	15	20	25	30	35	40	45	50	55
	Spindles											
–	–	–	–	225	300	375	450	525	600	675	750	825
1	900	975	1,050	1,125	1,200	1,275	1,350	1,425	1,500	1,575	1,650	1,725
2	1,800	1,875	1,950	2,025	2,100	2,175	2,250	2,325	2,400	2,475	2,550	2,625
3	2,700	2,775	2,850	2,925	3,000	3,075	3,150	3,225	3,300	3,375	3,450	3,525
4	3,600	3,675	3,750	3,825	3,900	3,975	4,050	4,125	4,200	4,275	4,350	4,425
5	4,500	4,575	4,650	4,725	4,800	4,875	4,950	5,025	5,100	5,175	5,250	5,325
6	5,400	5,475	5,550	5,625	5,700	5,775	5,850	5,925	6,000	6,075	6,150	6,225
7	6,300	6,375	6,450	6,525	6,600	6,675	6,750	6,825	6,900	6,975	7,050	7,125
8	7,200	7,275	7,350	7,425	7,500	7,575	7,650	7,725	7,800	7,875	7,950	8,025
9	8,100	8,175	8,250	8,325	8,400	8,475	8,550	8,625	8,700	8,775	8,850	8,925
10	9,000	9,075	9,150	9,225	9,300	9,375	9,450	9,525	9,600	9,675	9,750	9,825
11	9,900	9,975	10,050	10,125	10,200	10,275	10,350	10,425	10,500	10,575	10,650	10,725
12	10,800	10,875	10,950	11,025	11,100	11,175	11,250	11,325	11,400	11,475	11,550	11,625
13	11,700	11,775	11,850	11,925	12,000	12,075	12,150	12,225	12,300	12,375	12,450	12,525
14	12,600	12,675	12,750	12,825	12,900	12,975	13,050	13,125	13,200	13,275	13,350	13,425
15	13,500	13,575	13,650	13,725	13,800	13,875	13,950	14,025	14,100	14,175	14,250	14,325
16	14,400	14,475	14,550	14,625	14,700	14,775	14,850	14,925	15,000	15,075	15,150	15,225
17	15,300	15,375	15,450	15,525	15,600	15,675	15,750	15,825	15,900	15,975	16,050	16,125
18	16,200	16,275	16,350	16,425	16,500	16,575	16,650	16,725	16,800	16,875	16,950	17,025
19	17,100	17,175	17,250	17,325	17,400	17,475	17,550	17,625	17,700	17,775	17,850	17,925
20	18,000	–	–	–	–	–	–	–	–	–	–	–

THE DOFFING TASK is one of the most difficult assignments in the mill to maintain on schedule. After a standard has been determined, speed and accuracy of assignment assumes an important role as a timesaver when schedules are made up. Schedules act like signposts pointing toward production quotas; and after schedules and layouts are made, good supervision is the key point.

These doff charts include spindle loads from 35,000 to 40,000 spindles. They are based on a 40-hr. standard week, and the doff task remains proportionately the same if the work hours are increased or decreased.

The value of the charts is that all doff tasks with doff intervals ranging from 15 mins. to 20 hrs. are rapidly determined by dividing spindles per side (or frame) into the spindle load that has been assigned to the given doff interval.

An example: 40,000-spindle load; 40-hr. week; doff interval: 5 hrs., 15 mins.; spindles per frame: 228.

Now, under the 40,000 spindle load, where the row and column meet for the 5-hr. and 15-min. doff interval, the proportional spindle load is 5,250. By dividing this figure by 228 spindles

Doffer-interval range: 15 mins. to 20 hrs.

Standard week: 40 hrs.

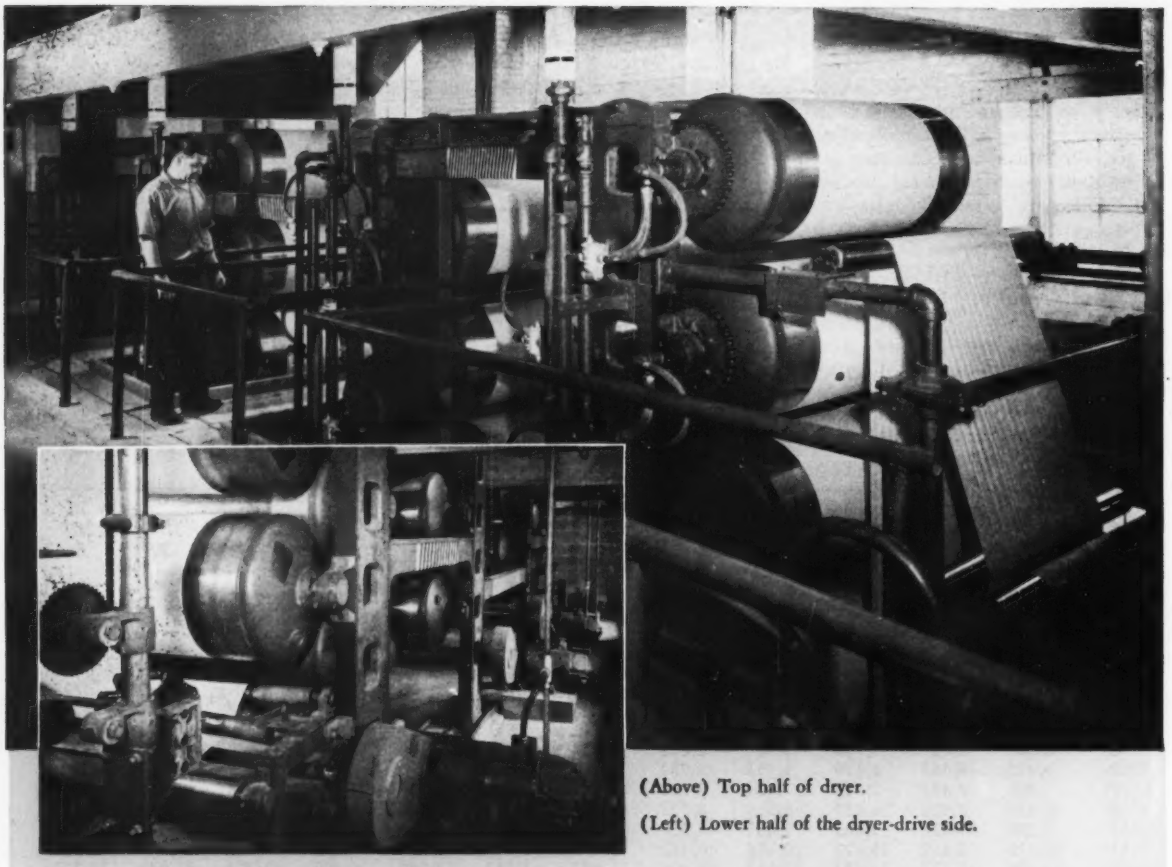
$$\frac{\text{Spindles per doff interval}}{\text{Spindles per side (or frame)}} = \text{Doff load}$$

37,000-Spindle Doff

Doff interval Hrs. ↓ / Mins. →	5	10	15	20	25	30	35	40	45	50	55
					Spindles						
–	–	–	–	231	308	385	462	540	617	694	771	848
1	925	1,002	1,079	1,156	1,233	1,310	1,387	1,465	1,542	1,619	1,696	1,773
2	1,850	1,927	2,004	2,081	2,158	2,235	2,312	2,390	2,467	3,544	2,621	2,698
3	2,775	2,852	2,929	3,006	3,083	3,160	3,237	3,315	3,392	3,469	3,546	3,623
4	3,700	3,777	3,854	3,931	4,008	4,085	4,162	4,240	4,317	4,394	4,471	4,548
5	4,625	4,702	4,779	4,856	4,933	5,010	5,087	5,165	5,242	5,319	5,396	5,473
6	5,550	5,627	5,704	5,781	5,858	5,935	6,012	6,090	6,167	6,244	6,321	6,398
7	6,475	6,552	6,629	6,706	6,783	6,860	6,937	7,015	7,092	7,169	7,246	7,323
8	7,400	7,477	7,554	7,631	7,708	7,785	7,862	7,940	8,017	8,094	8,171	8,248
9	8,325	8,402	8,479	8,556	8,633	8,710	8,787	8,865	8,942	9,019	9,096	9,173
10	9,250	9,327	9,404	9,481	9,558	9,635	9,712	9,790	9,867	9,944	10,021	10,098
11	10,175	10,252	10,329	10,406	10,483	10,560	10,637	10,715	10,792	10,869	10,946	11,023
12	11,100	11,177	11,254	11,331	11,408	11,485	11,562	11,640	11,717	11,794	11,871	11,948
13	12,025	12,102	12,179	12,256	12,333	12,410	12,487	12,565	12,642	12,719	12,796	12,873
14	12,950	13,027	13,104	13,181	13,258	13,335	13,412	13,490	13,567	13,644	13,721	13,798
15	13,875	13,952	14,029	14,106	14,183	14,260	14,337	14,415	14,492	14,569	14,646	14,723
16	14,800	14,877	14,954	15,031	15,108	15,185	15,262	15,340	15,417	15,494	15,571	15,648
17	15,725	15,802	15,879	15,956	16,033	16,110	16,187	16,265	16,342	16,419	16,496	16,573
18	16,650	16,727	16,804	16,881	16,958	17,035	17,112	17,190	17,267	17,344	17,421	17,498
19	17,575	17,652	17,729	17,806	17,883	17,960	18,037	18,115	18,192	18,269	18,346	18,423
20	18,500	–	–	–	–	–	–	–	–	–	–	–

38,000-Spindle Doff

Doff interval Hrs. ↓ / Mins. →	5	10	15	20	25	30	35	40	45	50	55
					Spindles						
–	–	–	–	237	317	396	475	554	633	712	792	871
1	950	1,029	1,108	1,187	1,267	1,346	1,425	1,504	1,583	1,662	1,742	1,821
2	1,900	1,979	2,058	2,137	2,217	2,296	2,375	2,454	2,533	2,612	2,692	2,771
3	2,850	2,929	3,008	3,087	3,167	3,246	3,325	3,404	3,483	3,562	3,642	3,721
4	3,800	3,879	3,958	4,037	4,117	4,196	4,275	4,354	4,443	4,512	4,592	4,671
5	4,750	4,829	4,908	4,987	5,067	5,146	5,225	5,304	5,383	5,462	5,542	5,621
6	5,700	5,779	5,858	5,937	6,017	6,096	6,175	6,254	6,333	6,412	6,492	6,571
7	6,650	6,729	6,808	6,887	6,967	7,046	7,125	7,204	7,283	7,362	7,442	7,521
8	7,600	7,679	7,758	7,837	7,917	7,996	8,075	8,154	8,233	8,312	8,392	8,471
9	8,550	8,629	8,708	8,787	8,867	8,946	9,025	9,104	9,183	9,262	9,342	9,421
10	9,500	9,579	9,658	9,737	9,817	9,896	9,975	10,054	10,133	10,212	10,292	10,371
11	10,450	10,529	10,608	10,687	10,767	10,846	10,925	11,004	11,083	11,162	11,242	11,321
12	11,400	11,479	11,558	11,637	11,717	11,796	11,875	11,954	12,033	12,112	12,192	12,271
13	12,350	12,429	12,508	12,587	12,667	12,746	12,825	12,904	12,983	13,062	13,142	13,221
14	13,300	13,379	13,458	13,537	13,617	13,696	13,775	13,854	13,933	14,012	14,092	14,171
15	14,250	14,329	14,408	14,487	14,567	14,646	14,725	14,804	14,883	14,962	15,042	15,121
16	15,200	15,279	15,358	15,437	15,517	15,596	15,675	15,754	15,833	15,912	15,992	16,071
17	16,150	16,229	16,308	16,387	16,467	16,546	16,625	16,704	16,783	16,862	16,942	17,021
18	17,100	17,179	17,258	17,337	17,417	17,496	17,575	17,654	17,733	17,812	17,892	17,971
19	18,050	18,129	18,208	18,287	18,367	18,446	18,525	18,604	18,683	18,762	18,842	18,921
20	19,000	–	–	–	–	–	–	–	–	–	–	–



(Above) Top half of dryer.

(Left) Lower half of the dryer-drive side.

This 40-can Dryer Operates at 250 ypm and features

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per frame, the doff task is found:

$$\frac{5{,}250}{228} = 23 \text{ frames}$$

Includes Personal Time

The supervisor should remember that once a standard has been accepted, the spindle load includes allowance for personal time or rest. Sometimes this fact leads to confusion in figuring the doff intervals for yarn numbers. The following example will prove this point:

A mill's standard is 36,000 spindles and includes 10% personal time for the doffer. With a 40-hr. standard week, the average spindles doffed per minute is 15; but this figure cannot be used to find the number of minutes to doff a frame.

Actually, the figure is slightly higher because the mill's 36,000-spindle load is based on 90% of 40 hrs. Therefore, while doffing, the doffer will average 16.67 spindles per minute; and this higher figure should be used in determining the doff interval. Personal time or rest is cumulative until the doff cycle has been completed or a break is allowed during the doff cycle.

A rest break in a long rotative doff is highly desirable and acts like a tonic in preventing weariness and subsequent production losses. The continuity of the long rotative doff does not have to be broken up.

A doffer, for example, doffing the above spindle load would have a total of 36 200-spindle frames to doff with an 8-hr. doff interval (each frame doffing every 8-hr. period). Doffing 16.67 spindles per minute, the doffer would take approximately 432 mins. to complete the cycle. His 10% rest would total 48 mins.

If this cycle is broken up to allow a 12-min. rest at the end of nine frames, production is increased rather than decreased. At the end of each 12-min. rest, the first frame of the broken doff cycle should be ready to doff. Proper layout by supervisor assures continuity of the complete cycle.

39,000-Spindle Doff

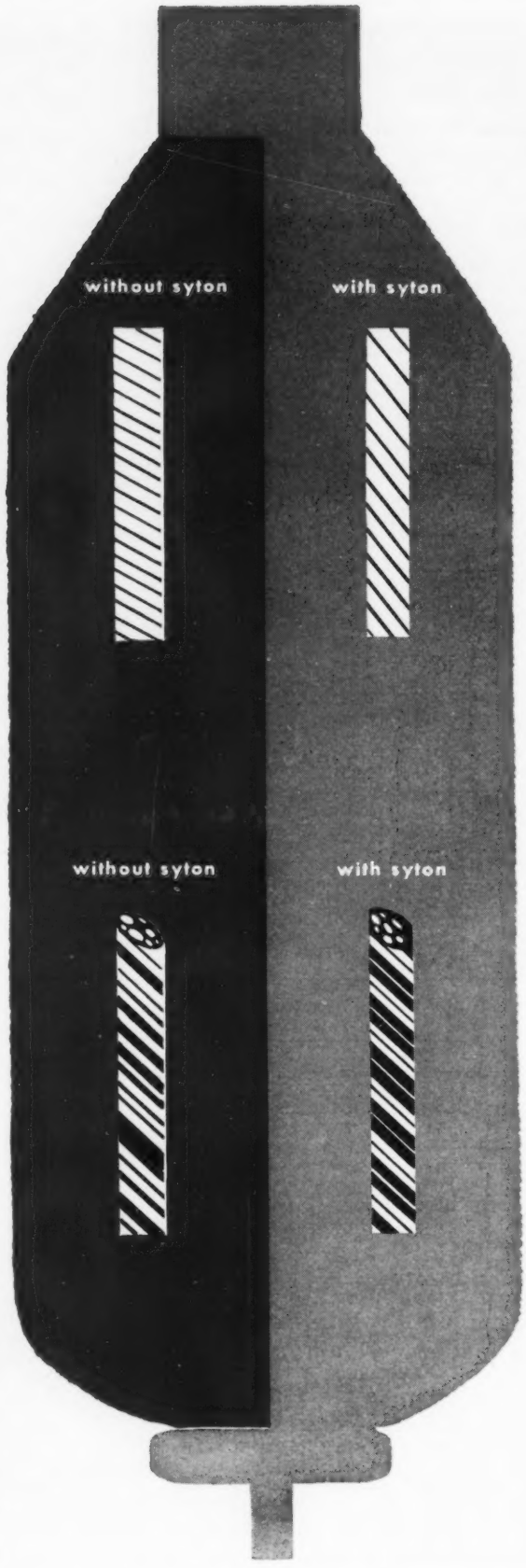
Doff interval Hrs. ↓	Mins. → 5	10	15	20	25	30	35	40	45	50	55
	Spindles										
–	–	–	–	244	325	406	488	569	650	731	813	894
1	975	1,056	1,138	1,219	1,300	1,381	1,463	1,544	1,625	1,706	1,788	1,869
2	1,950	2,031	2,113	2,194	2,275	2,356	2,438	2,519	2,600	2,681	2,763	2,844
3	2,925	3,006	3,088	3,169	3,250	3,331	3,413	3,494	3,575	3,656	3,738	3,819
4	3,900	3,981	4,063	4,144	4,225	4,306	4,388	4,469	4,550	4,631	4,713	4,794
5	4,875	4,956	5,038	5,119	5,200	5,281	5,363	5,444	5,525	5,606	5,688	5,769
6	5,850	5,931	6,013	6,094	6,175	6,256	6,338	6,419	6,500	6,581	6,663	6,744
7	6,825	6,906	6,988	7,069	7,150	7,231	7,313	7,394	7,474	7,556	7,638	7,719
8	7,800	7,881	7,963	8,044	8,125	8,206	8,288	8,369	8,450	8,531	8,613	8,694
9	8,775	8,850	8,938	9,019	9,100	9,181	9,263	9,344	9,425	9,506	9,588	9,669
10	9,750	9,831	9,913	9,994	10,075	10,156	10,238	10,319	10,400	10,481	10,563	10,644
11	10,725	10,806	10,888	10,969	11,050	11,131	11,213	11,294	11,375	11,456	11,538	11,619
12	11,700	11,781	11,863	11,944	12,025	12,106	12,188	12,269	12,350	12,431	12,513	12,594
13	12,675	12,756	12,838	12,919	13,000	13,081	13,163	13,244	13,325	13,406	13,488	13,569
14	13,650	13,731	13,813	13,894	13,975	14,056	14,138	14,219	14,300	14,381	14,463	14,544
15	14,625	14,706	14,788	14,869	14,950	15,031	15,113	15,194	15,275	15,356	15,438	15,519
16	15,600	15,681	15,763	15,844	15,925	16,006	16,088	16,169	16,250	16,331	16,413	16,494
17	16,575	16,656	16,738	16,819	16,900	16,981	17,063	17,144	17,225	17,306	17,388	17,469
18	17,550	17,631	17,713	17,794	13,875	17,956	18,038	18,119	18,200	18,281	18,363	18,444
19	18,525	18,606	18,688	18,769	18,850	18,951	19,013	19,094	19,175	19,256	19,338	19,419
20	19,500	–	–	–	–	–	–	–	–	–	–	–

40,000-Spindle Doff

Doff interval Hrs. ↓	Mins. → 5	10	15	20	25	30	35	40	45	50	55
	Spindles										
–	–	–	–	250	333	417	500	583	666	750	833	916
1	1,000	1,083	1,167	1,250	1,333	1,417	1,500	1,583	1,666	1,750	1,833	1,916
2	2,000	2,083	2,167	2,250	2,333	2,417	2,500	2,583	2,666	2,750	2,833	2,916
3	3,000	3,083	3,167	3,250	3,333	3,417	3,500	3,583	3,666	3,750	3,833	3,916
4	4,000	4,083	4,167	4,250	4,333	4,417	4,500	4,583	4,666	4,750	4,833	4,916
5	5,000	5,083	5,167	5,250	5,333	5,417	5,500	5,583	5,666	5,750	5,833	5,916
6	6,000	6,083	6,167	6,250	6,333	6,417	6,500	6,583	6,666	6,750	6,833	6,916
7	7,000	7,083	7,167	7,250	7,333	7,417	7,500	7,583	7,666	7,750	7,833	7,916
8	8,000	8,083	8,167	8,250	8,333	8,417	8,500	8,583	8,666	8,750	8,833	8,916
9	9,000	9,083	9,167	9,250	9,333	9,417	9,500	9,583	9,666	9,750	9,833	9,916
10	10,000	10,083	10,167	10,250	10,333	10,417	10,500	10,583	10,666	10,750	10,833	10,916
11	11,000	11,083	11,167	11,250	11,333	11,417	11,500	11,583	11,666	11,750	11,833	11,916
12	12,000	12,083	12,167	12,250	12,333	12,417	12,500	12,583	12,666	12,750	12,833	12,916
13	13,000	13,083	13,167	13,250	13,333	13,417	13,500	13,583	13,666	13,750	13,833	13,916
14	14,000	14,083	14,167	14,250	14,333	14,417	14,500	14,583	14,666	14,750	14,833	14,916
15	15,000	15,083	15,167	15,250	15,333	15,417	15,500	15,583	15,666	15,750	15,833	15,916
16	16,000	16,083	16,167	16,250	16,333	16,417	16,500	16,583	16,666	16,750	16,833	16,916
17	17,000	17,083	17,167	17,250	17,333	17,417	17,500	17,583	17,666	17,750	17,833	17,916
18	18,000	18,083	18,167	18,250	18,333	18,417	18,500	18,583	18,666	18,750	18,833	18,916
19	19,000	19,083	19,167	19,250	19,333	19,417	19,500	19,583	19,666	19,750	19,833	19,916
20	20,000	–	–	–	–	–	–	–	–	–	–	–

SYTON

How It Increases Spinning Efficiency



Syton works by increasing interfiber friction. Fibers are run through an emulsion of Syton and become coated with it. This coating, consisting of hundreds of microscopic particles, increases friction and you get less twist for equal interfiber drag.

Reduced segregation of dissimilar fibers and other advantages are obtained with Syton. There is less fly and waste, more condensed rovings, fewer ends down, faster machine speeds. The yarn itself is also more uniform and possesses higher strength.

Here are the answers. Send for this complete booklet, "Profitable Spinning of Wool and Wool Blends with Syton." Write on your company letterhead to Inorganic Chemicals Division, Monsanto Chemical Company, 710 North 12th Street, St. Louis 1, Missouri.

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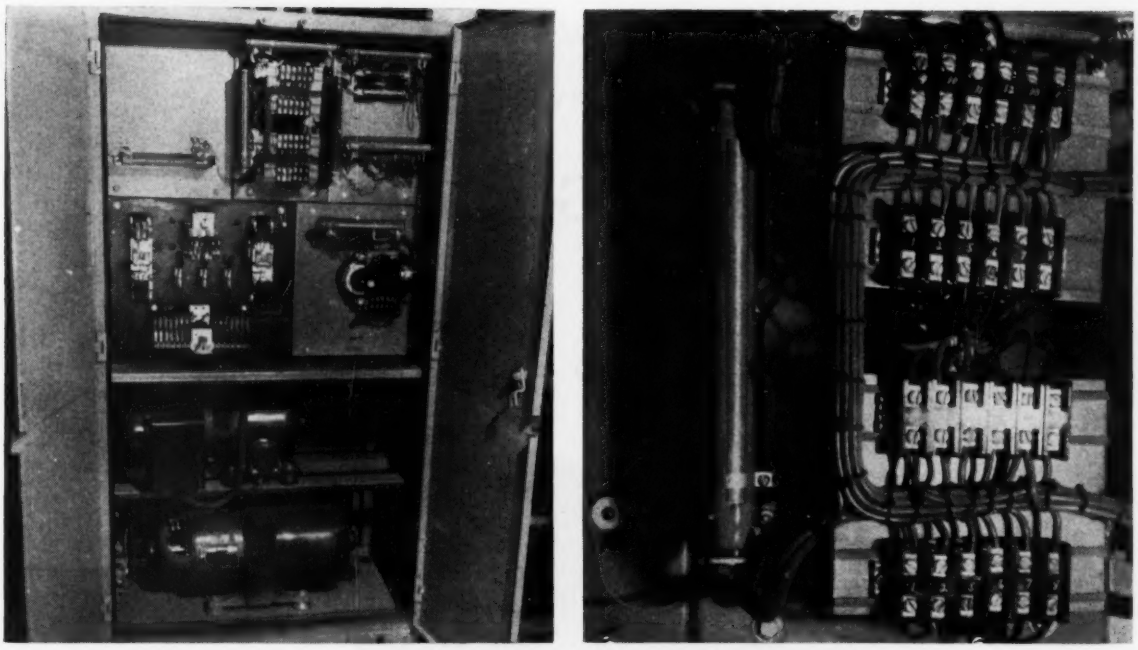

MAGNETIC-AMPLIFIER COMPONENTS are all panel-mounted in a single enclosed cabinet. The magamp itself has no tubes or moving parts. That's one of the reasons it's . . .

. . . A Positive Control for Multimotor SLASHER DRIVES

Multimotor slasher drives equipped with magnetic-amplifer control offer these advantages—

- **A wide range of speeds**
- **Automatic control of beam tension**
- **Automatic or mechanical moisture control**
- **Reduced mechanical maintenance**

THE MULTIMOTOR SLASHER DRIVE is one of the most extensively applied drives for a single application in the textile industry. The magnetic-amplifier beam-tension control is a recent development of the packaged multimotor slasher drive.

Magamp Is a Composite Control

With the adjustable-voltage multimotor, slasher-drive system, the size boxes, delivery roll, and beam are driven individually by d.c. motors supplied with power from a.c. to d.c. motor generator set.

The size-box motor or motors and the delivery-roll motor run at speeds proportional to the speed of the yarn. The beam motor, in addition to running at a speed proportional to the yarn speed, must also run at speeds inversely proportional to the diameter at which the yarn is winding on the beam. Thus at any yarn speed, the beam motor will run faster with a new beam with little yarn on it; and it will run slower the more yarn there is wound on the beam.

The speed of the slasher is controlled by adjusting the armature voltage to all motors as a group with the d.c. generator field rheostat. The slasher speed is a function of the voltage applied to the motors.

With magamp control, the size-box motor or motors and the delivery-roll motor are operated at an essentially constant field. There's only a small amount of field control on the size-box motor for tension control between the size box and delivery roll.

On the other hand, the beam motor requires a degree of field control comparable to the amount of beam diameter increase from empty to full beam. Since the speed of a d.c. motor varies inversely with the field strength, this property is used to take care of beam build-up as the yarn slows down the beam.

With increasing beam diameter and constant yarn delivery, the beam must slow down in revolutions per minute even though the surface speed is constant. It is important to control the motor torque during the build-up of the beam to maintain uniform yarn

CONTINUED ON PAGE 233

Based on a paper presented by A. T. Bacheler and J. G. Stephenson, Westinghouse Electric Corp., at a recent Georgia Tech meeting of the Textile Subcommittee, American Institute of Electrical Engineers.

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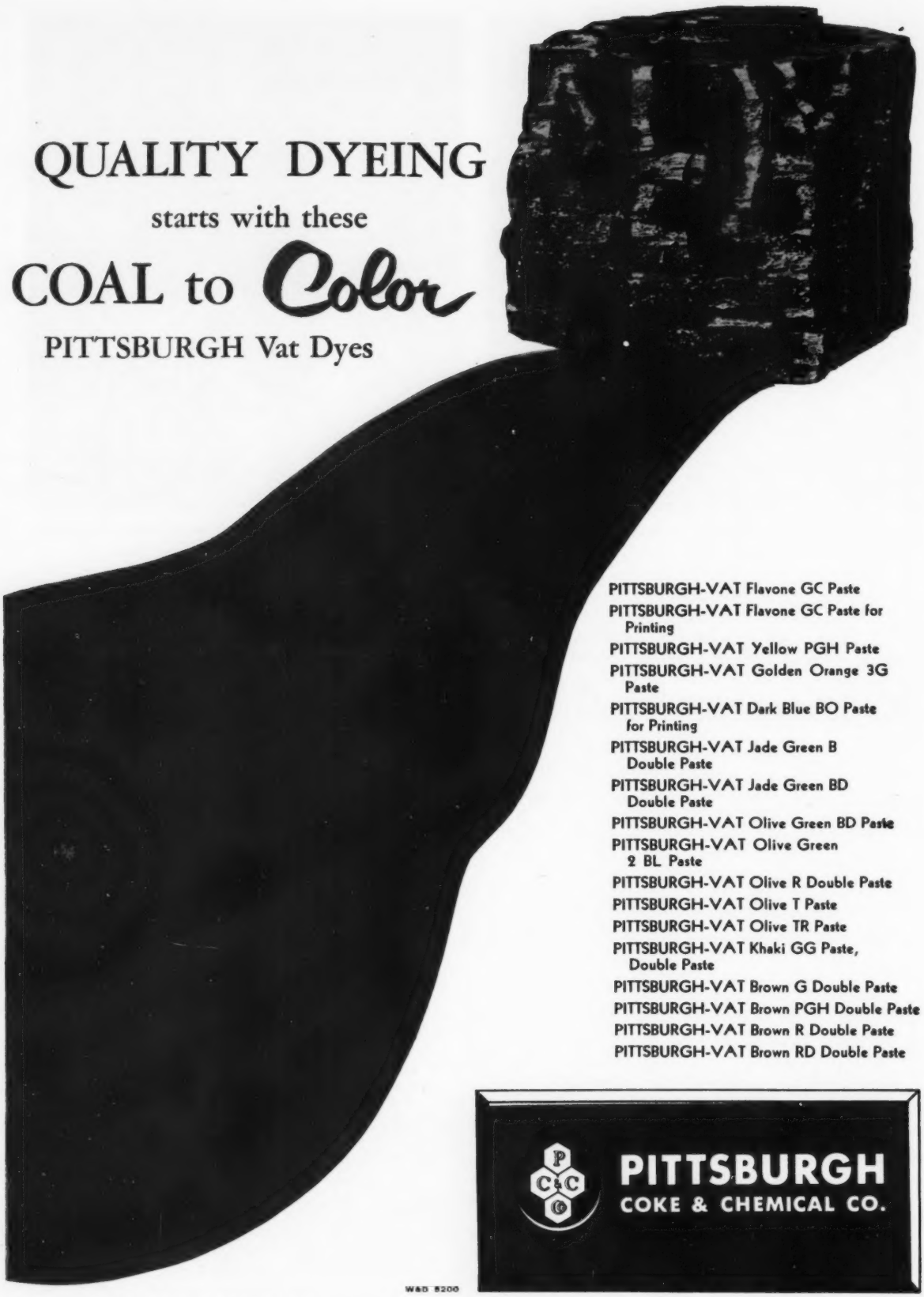

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PITTSBURGH-VAT Olive TR Paste
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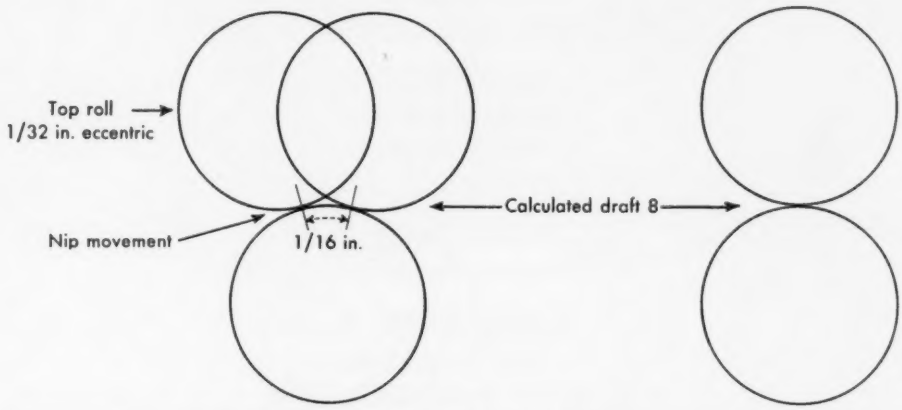
Fig. 1. How Nip Movement Causes Variation



NIP MOVEMENT IS DOUBLE the eccentricity of a top roll. In spinning 32s with a nip movement of 1/16 in. and draft of eight between the sets of rolls, the yarn would vary from 26s to 46s on every revolution of the front rolls.

How You Can Reduce Uneven SPINNING DRAFTS

Here are some tips on how to control:

- **Sizing variations—caused mainly by carelessness, off-size rolls, and slipping rolls**
- **Thick and thin places—one big cause is eccentric rolls**

By N. H. POMFRET

IT'S IMPOSSIBLE to spin uniform yarn from irregular roving, but the job of the spinning department is to spin yarn without introducing more irregularity. Drafting irregularities should be considered more important than twist and lengths of yarn on bobbins. There are two kinds of drafting irregularity: irregular sizings (long-term variation) and thick and thin places (short-term variation).

How Sizing Variations Pop Up

To keep variation of sizings to a minimum, the spinner should use the same draft for spinning the same number from the same hank roving. This is an elementary principle, but it is not always followed under the pressure of mill conditions.

Sometimes, in an attempt to hit the average number on the nose for a small order, the back-roll gear is changed a tooth or so; and this slight change is often forgotten in changing back to normal numbers.

Other times, with many frames on the same yarn number, a shortage of gears develops; and back- or front-roll gears are changed to overcome a temporary difficulty. Temporary measures have a habit of becoming permanent; and if they are forgotten completely, the results are disastrous at the next change.

A spinner might also have different types of frames spinning the same number with different draft constants, draft gears, and actual drafts. To overcome these difficulties, it is good practice to make all draft constants in a department exactly the same wherever practical. Second hands and section men should be instructed not to change a draft gear without reporting the change to the overseer. The change can then be recorded on a change ticket or the machine itself, and an early effort can be made to get the machine back on standard gearing.

Section men should be trained to test yarn for size whenever they make a gear change, no matter how slight. By doing this, the second hand checks not only the gear calculation but also whether he put on the right gear. It is not unknown for a second hand to take off a gear, put it away, say something to somebody, and then pick up the same gear and put it back to work.

Causes of Irregular Sizings

The overseer does not rush to change draft gears after receiving each day's sizing reports from the quality-control department. He expects some variation between frame and frame and between spindle and spindle on the same frame. This is normal variation as far as he is concerned—variation over which he has no direct control.

A survey of possible and probable causes of variation will help to decide when to start worrying and what action to take.

Off-Size Rolls

When draft calculations are made,

CONTINUED ON PAGE 293

* Pharmasol and
* Pharmol Bordeaux BN

Rich, economical bordeaux shades of good fastness to light washing and chlorine.

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Five Things You Need To Know To
CONTROL WASTE

Questions and answers on—

- **Things you need to know about waste in your mill**
- **How to find the answers to the waste problems in your own operation**

▶ What is the best way for a mill to keep track of how much waste it is making?

Most mills weigh and record the amounts of different types of waste—card fly and strips, soft waste, hard waste, sweeps, etc. But each mill should also know how much raw material (cotton, wool, rayon, or other synthetic fiber) it takes into the plant and how much material comes out as finished product and as waste.

In many cases, the total pounds turned out will amount to more than the weight of the raw material put in. To find out how much waste you've really made, you need to know how much water was in the raw material when it entered the plant and how much water, starch, and size are in the finished goods that go out.

▶ How do you find out how much salable waste has cost you?

There are three items of cost in your waste: (1) the cost of the raw material, (2) the cost of processing the fiber up to the point where the waste was made, and (3) the cost of whatever materials (tint, dye, starch, size, etc.) you have put into the product up to the point where the waste was made.

The sales value of the waste subtracted from that total cost of the waste gives you the net cost (or loss) of the waste to the mill.

Sometimes it is surprising to find out what that cost amounts to. Some filament-rayon mills hold it to 1.5 to 2¢ per pound of fiber entering the plant. In some worsted mills, it runs as high as 60 to 70¢ per pound.

Based on a paper presented by James I. Teat, Southeastern Engineering Co., at a meeting of the Southern Textile Assn.

▶ How should you go about reducing waste?

The first step should be to find out how much waste you are making at every process. Then find out how much of it is necessary.

At every process and with every type of fiber, you have to make some waste in order to keep up the quality of your product. For example, you don't want the motes, trash, leaf, etc. in raw cotton to go into your product; and you don't want every inch of warp on the beam to weave into your cloth. Or take a quill of filling; we know that for quality production we have to leave several yards of filling on the quill.

However, any waste above the amount necessary for quality production is excessive. So waste reduction should start at that point.

We might say that there are five things you should find out:

1. How much waste you are making
2. How much it is costing you
3. How much of it is excessive
4. How much can be saved
5. How to save it

▶ What are the major causes of excessive waste?

Probably everyone agrees that the biggest cause is carelessness of the worker. Perhaps the next most important cause is that the worker is not sufficiently skilled in the job he is doing.

▶ Can a mill take a set of predetermined waste standards and apply them to its operation?

It is so unlikely that you might say that it's impossible. One mill may have the same machinery, use the same raw material, and manufacture the same products but handle its waste a little differently from another mill. Take spooler thread for an example. One mill may count as spooler-thread waste only the waste that the knotter drops out. Another mill may also include tailings.

Actually, the best way for any mill to approach its waste problem is to analyze the problem in each production department and at each process in the department. Waste standards should be set up as realistically as timestudy men set up a work assignment.

Which car of Caustic Soda saves you the most money?

Both of these cars look alike, and their capacities are the same. Both are filled. Yet the one on top may save you $131 per car. Can you guess why?

The answer is simply that the car on top contains 73% caustic soda, while the other contains 50%.

More and more companies are specifying the higher concentration in order to save money. These savings are possible because:

1. A car of 73% contains more caustic by volume.
2. A car of 73% can be unloaded as fast as a lower concentration, thereby saving man-hours.

One Columbia-Southern customer who converted from 50% to 73% figured the savings to his company at $131 per car. Other customers who made the changeover show total annual savings ranging from $1179 to $35,100.

The amount of caustic soda you use and your location will determine how much you may save. But the point is: If you use caustic soda, you owe it to yourself to check the possible economies. Our staff will be glad to do the figuring for you—no obligation, of course. Just contact the Caustic Soda Department at our Pittsburgh office.

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Here's a reminder about the real meaning of "communications" and some suggestions on

How To Get Facts Across to Workers

Pointers FOR SUPERVISORS

By **M. A. CROSS,** Director of Industrial Relations, Dan River Mills, Inc.

AS A SUPERVISOR, as a leader of other people, you have an important job of communications to perform: to let your subordinates know what is going on, what is happening that will affect them, and what changes are being made and why. And, not least important, you have to find out what is on their minds.

In recent years, industry generally has demonstrated a heightened interest in the whole subject of communications. Frequently, this interest has been concentrated on developing techniques for giving employees an understanding of the American business system and selling free enterprise. This procedure is sound, and much excellent work has been done with very beneficial results.

Yet it has been discovered time and time again that an employee's attitude toward his company, our business system, and our free-enterprise economy is molded much more by what happens to him on the job than by discussions of economics or by what is happening in areas remote from his own job interest. The real job of communications is done by supervisors; and it is largely within their control whether that job is good, bad, or indifferent.

Here are some of the points a supervisor should keep in mind if he wants to improve his communications with his employees.

1. Effective communication is more than simply passing on information.

If a mere recital of facts were enough, it would be sound practice to reduce the information to writing and turn it over in that form to employees.

But that technique ignores the preference all of us have for face-to-face communications. We want to watch the other person while he talks. We study his facial expression, his gestures; we listen for intonations in his voice. Those things help us to understand what he is saying. They enable us to place an interpretation on the meaning of the information he is passing on to us.

We are not, after all, blotters that absorb; we are individuals who seek the significance of information in the personal terms of how it affects us.

I don't minimize the desirability of reducing facts or explanations to writing when that procedure will help create understanding and avoid mistakes. What I am trying to emphasize is that all communications are more effective when they are supplemented by face-to-face conversation.

2. Communication takes place in the absence of words.

A newborn baby can let us know—without words—that he is hungry. Or think of an umpire at a ball game. Often we can't hear what he says, but his gestures leave no doubt of his decision.

The same principle applies on the job. How you look, the gestures you use, failure to speak to employees, your obvious anger or anxiety—all communicate something to your employees. The important thing is to keep this fact in mind and suit your actions, as well as your words, to what you want to communicate to employees.

3. Effective communication is a two-way operation.

To put it another way, you have to know what the other guy is thinking in order to get through to him. So your communications, as a supervisor, require your doing a certain amount of pretty careful listening to what your employees have to say.

A good salesman tries to sell his customer on the basis that his product will work to the profit of the customer. He puts the emphasis on the customer's interest, not his own.

A good supervisor also realizes that people tend to interpret information on the basis of how they think it will affect them personally. If a technological change is being made that will cause a rearrangement of job assignments, the affected employees want to know when the change is taking place, why it is being made, how they as individuals will be reassigned, what new duties they will have, what opportunity they will get for learning different job elements, what effect the change will have on their rate of pay or incentive earnings, etc.

A supervisor dealing with this type of situation will do a better job of communicating if he anticipates employee reaction and takes a reasonable amount of time to listen to and answer their questions during his discussions with them.

This point is important enough to repeat: communications should be two-way. They should go down, from supervisor to employee, and they should go up, from employee to supervisor.

4. Effective communications should give the whole story.

It is natural, in discussing problems with employees, to assume that they have almost as much knowledge as you have. Too often this is not the case, and your rather brief explanation leaves ground uncovered that employees are entitled to know about.

For example, let's assume you are establishing a new procedure for recording production on an incentive operation. The basic reason for the new procedure is to make possible a better cost breakdown.

Chances are that you have discussed possible procedures with your superintendent. Maybe you have obtained opinions from other supervisors. Probably you've had some consultation with the standards and cost departments. Maybe the final step was a joint conference with all these parties to reach definite agreement on a satisfactory procedure. In any event, you know the problem from beginning to end because you've been in on every step from identifying what the problem was to working out a practical solution.

CONTINUED ON PAGE 276

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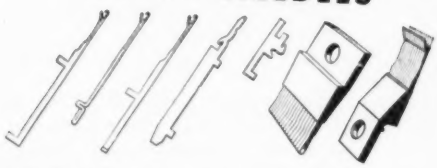
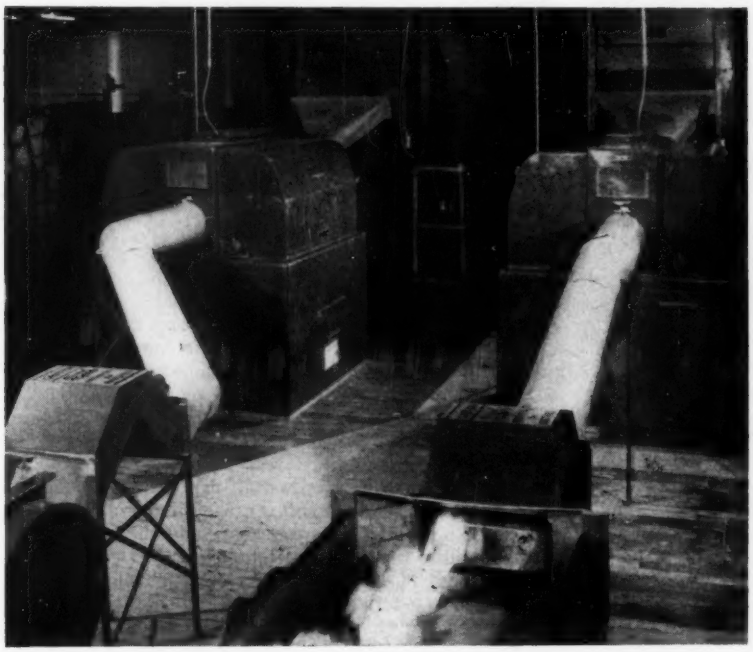


Wire Products Division

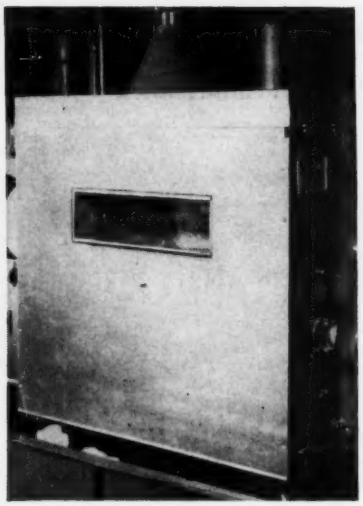
TEXTILE MACHINE WORKS, READING, PENNA.

TEXTILE Equipment NEWS

Whitin's New Opening Equipment Cleans With a Buffeting Action



AXI-FEED is a small unit that attaches to any standard blending feeder to prepare stock for the Axi-Flo. Stock is delivered in tufts the size of silver dollars.



AXI-FLO is a separate opening and cleaning unit. With Middling and better cotton, no additional cleaning equipment is used. For below-Middling cotton, an additional down-stroke cleaner is recommended.

To handle mechanically harvested and dirty cotton, two new cotton cleaners, the Axi-Feed and Axi-Flo, have been developed by Whitin Machine Works, Whitinsville, Mass. Designed as a working combination, the Axi-Feed is attached to the blending feeder to prepare stock for the Axi-Flo, which is installed as the main opening-and-cleaning machine.

For Middling-grade and better cotton, these two units can be used with no additional cleaning or opening machinery in the opening line. For cottons below Middling, an additional down-stroke cleaner is recommended. From the Axi-Feed, stock is delivered in tufts the size of a silver dollar. A slight cleaning takes place, and a suction duct on top takes off dust.

The Axi-Feed is attached to the delivery end of the blending feeder, and no changes are necessary in the placement of the feeders. A pulley is attached to the feeder drive to power the preopening unit; so no extra horsepower is required. The working elements are two rolls with pins: spiked pins strip stock from the spiked apron, and blunt pins on the second roll provide a slight beating action.

With a small motor attached to the spiked apron of the feeder, the elements of the Axi-Feed revolve at their working speed; and only the spiked apron slows down to handle variations in stock requirements.

The Axi-Flo machine, which is the main opening-and-cleaning unit, operates by a combination of air flow, pin-roll agitators, and grid bars. The machine is called Axi-Flo because the stock is fed parallel to the axis of the rolls instead of perpendicular. (The rolls are 90° to the duct system.) Fan speed for the duct system is 1,000 to 1,200 cu. ft. per min., depending on the production rate. Production is up to 1,200 lbs. per hr. per machine.

The two agitators rotate at 400 rpm. in the same direction, and a small deflection plate controls cotton going between the two rolls. Incoming stock is blown toward the right-hand agitator, which carries it across one set of grid bars; the first bar in each set is a pin bar, which helps to open tufts of stock.

As the stock comes around to the

CONTINUED ON PAGE 270

West Point Counter Manufactured by Sheffield

The Neptel is an electronic instrument for counting yarn imperfections such as neps, motes, naps, etc. Developed by the research department of West Point Mfg. Co., West Point, Ga., the Neptel is manufactured and distributed by Sheffield Corp., Dayton 1, Ohio.

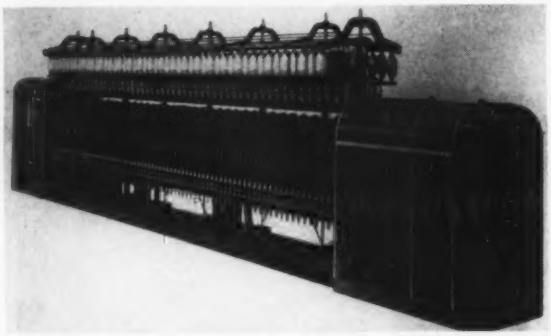
Thirty seconds are required to test 50 yds. of yarn, irrespective of fiber, yarn number, or quality level. Imperfections are counted in 100% of the sample, and a skilled operator is not required.

The yarn is exposed to a beam of light, which operates an electric eye. When an imperfection passes, the amount of light changes. Through a signal circuit, the imperfection is counted. The results are read directly.

THE NEPTEL tests 50 yds. of yarn in 30 secs. Total imperfections are read directly.

Circle T-2 on Reader-Service Card

Platt's Frame Has Stationary Ring Rail



COTTON FRAME features a stationary ring rail. On machines with up to a 9-in. lift, a fixed front roll height is maintained.

The new M2 ring spinning machine of Platt Brothers, distributed by Atkinson, Haserick & Co., 211 Congress St., Boston, Mass., has a stationary ring rail on all models, including the 9-in.-lift frame. On machines with up to a 9-in. lift, a fixed front roll height is maintained, which insures a good spinning angle between the roll nip and lappet, as well as a uniform tension.

Built on unit construction principles, the machine has an over-all width of 27 ins. The headstock incorporates the builder mechanism and drive, the twist and draft gearing, and all the controls. The off-end unit houses the main motor and drive to the spindles and rolls, the Pneumafil broken-end collector box and motor, and the traverse mechanism.

Roller-bearing spindles are fitted as standard, and separators are placed between the spindles to prevent lashing during spinning. The heart cam is driven through change gears by a separate fractional-horsepower motor; so the cam can be stopped and reversed automatically during the return of the spindle rails to the starting position or for reciprocating the rails when an automatic bunching motion is fitted to filling frames. The spindle rails are automatically raised at the completion of the build by a second fractional-horsepower motor.

Circle T-3 on Reader-Service Card

Autoclave for Setting Nylon in the Piece

A machine for setting nylon fabrics in the piece, introduced by Sanderson & Co. Ltd., Manchester, England, features a new method of steam injection and accurate and automatic control of the processing sequence.

Before steam is injected into the pressure chamber, a vacuum is created. The boiling point is lowered; and the problem of condensate, created by steam coming into contact with cold rolls, is reduced. The lower perforations in the central roll, through which the steam is injected, are fitted on the inside with short tubes to keep condensate from leaking on the fabric.

The fabric is batched on a roll, which contains up to 160 yds. of cloth; and the roll is carried in a trolley cradle. The cradle is wheeled into the vessel, and the cradle positions the roll so that it is connected with the steam supply and exhaust. Then the door is closed and clamped. A press-button starts the process, after which the control is automatic. The sequence takes approximately 20 mins., and fabric is processed at the rate of 400 yds. per hr.

Circle T-4 on Reader-Service Card

Double Twister From England

A multipurpose twister with a range from heavy-carpet to fine-nylon yarns is available from Arundel Coulthard & Co. Ltd., Preston, Lancashire, England. The spindles are held to the belt by mechanical means. Each spindle is equipped with a foot-controlled starting device, which operates the spindle and the feed unit. A belt with a high friction contact is used, and the belt is tensioned by the counterweighted motor carriage.

A wide range of ring sizes is necessary for the range of yarns, from 3½ ins. for light work to 5¼ ins. for heavy yarns. Each ring is separately mounted in a split-segment holder fastened to the ring rail; for larger sizes, a balloon-control ring is fitted. Separators between the spindles are standard. Three different feed systems can be applied, and all are interchangeable. A spindle stop motion for up to 12 ends insures protection above and below the feed unit.

The creel accommodates packages unwound by unrolling or from overend.

Circle T-5 on Reader-Service Card

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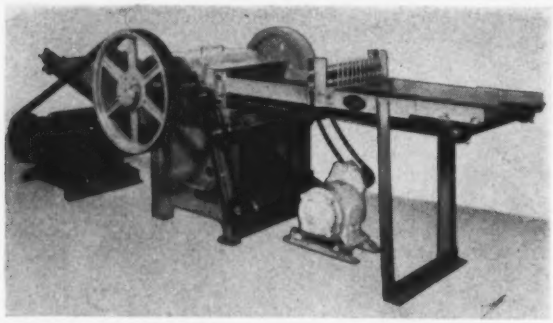
Waste and Staple Cutter



COMBINATION CUTTER is for mills that need both staple and waste cutters but don't have enough work to keep separate machines busy.

A combination thread waste and staple cutter has been introduced by Taylor, Stiles & Co., Riegelsville, N. J.

The thread waste or continuous filaments are fed on a feed apron to the feed rolls, which are made in various combinations depending on the material to be cut. They can be deep fluted, knurled steel, or stainless; the top roll can be hard or soft, natural or synthetic rubber, with a smooth, steel bottom roll.

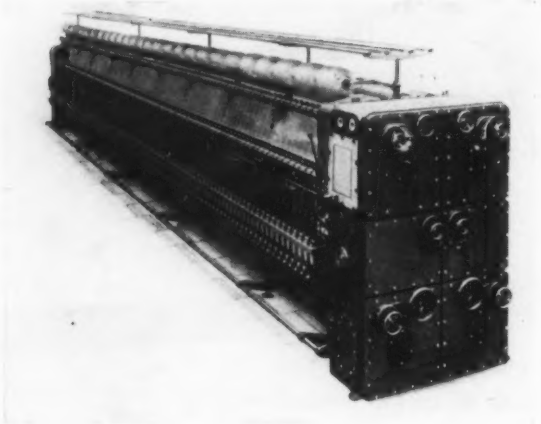
The cutting element is a head with fly knives operating against a bed knife. From here, the cut yarn passes onto a discharge apron or into a chute.

In cutting staple, the stock is run through the two sets of pins and the tension rolls.

When thread waste is run, the tension rolls and rear pins are removed, and the stock is fed onto the apron under the front pins.

Circle T-6 on Reader-Service Card

German Wool-Spinning Frame Runs at 1,200 to 5,500 Rpm.



WOOL FRAME has all controls grouped on the end of the frame. Another feature is the eight-spindle drive.

On the Mak Type 631 ring spinning frame, made by Maschinenban Kiel A. G., Kiel-Friedrichsdorf, Germany, change wheels have been eliminated. All controls are housed at one end of the frame, and handwheels with indicators give complete control of spindle speed (1,200 to 5,500 rpm.), twist per meter (80 to 1,200 turns), draft (0 to 60%), and changing from S to Z twist. Adjustments to bobbin build and traverse length are also controlled from the end panel.

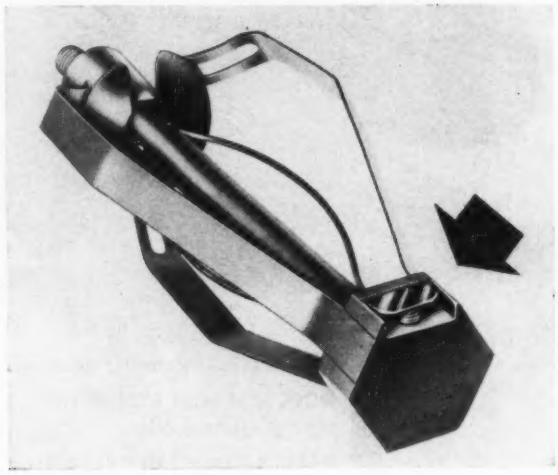
The spindles are driven in groups of eight, and the drive is taken from a fast-running shaft via skew gearing to each group; endless woven spindle bands can be used. A separate motor is provided for each side of the frame.

False-twist tubes, running in ball-bearings, are fitted between the two sets of drawing rolls. The tubes are designed for easy threading and do not need a special threading device.

Broken ends are pneumatically removed through collecting nozzles below the front rolls. Collected pieces of roving are in a clean and loosened state, and they can be returned to the card without further treatment.

Circle T-7 on Reader-Service Card

New Cone Holder Cuts Creeling Change-Over Time



CONE HOLDER, made by Edward J. McBride Co., Cottman Ave. and Wissinoming St., Philadelphia 35, Pa., reduces change-over time in creeling operations from cone to tube, cone to bobbin, cone to pirn, and back again. No mechanical adjustments or setscrews are required. A spring keeps the cone holder in place; and the holder snaps on and off. Samples are available for testing.

Circle T-8 on Reader-Service Card

Two-Creel Warping

The beamer made by Thomas Holt Ltd., Rochdale, Lancashire, England, can now be supplied with a built-in traversing device to allow two or more creels to be used side by side. While one creel is being filled, the other is in use.

Each creel is fitted with a comb stand, and the ends from the creel not in use can be laid in the comb to start warping without delay. A push-button-controlled geared motor drives the wheels of the traversing system; the wheels run on metal strips fastened to the floor.

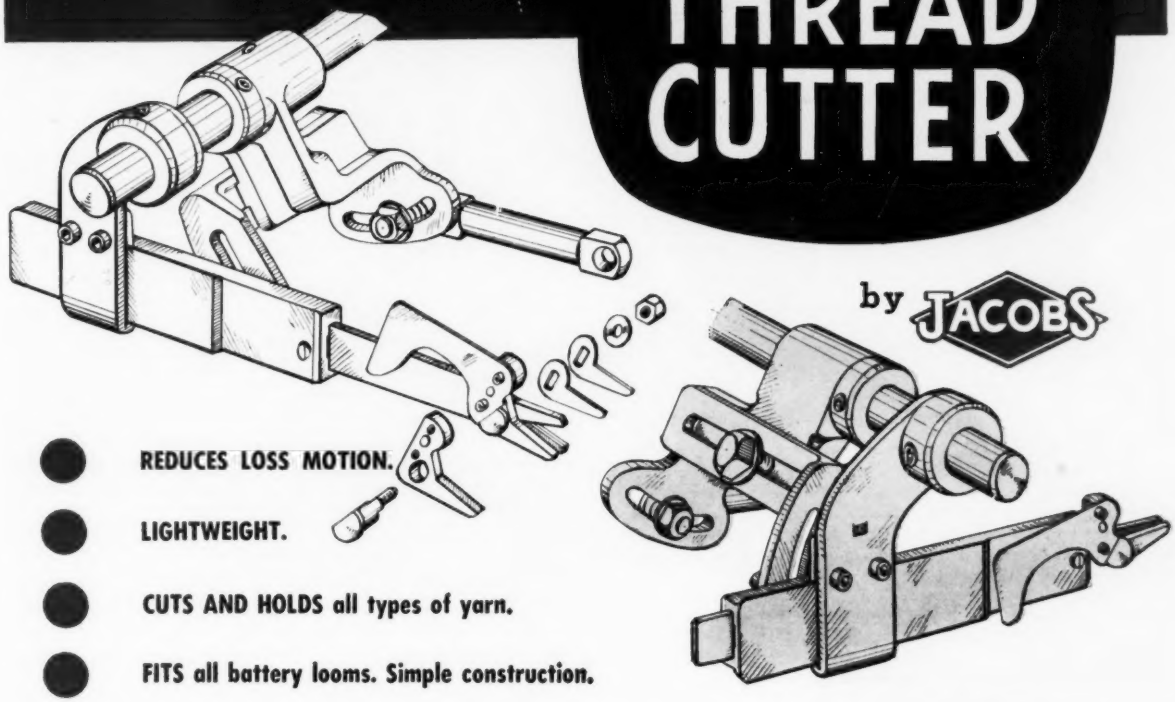
Where space is restricted, the creels can be arranged with their stands and combs in tandem, with the beam warper mounted on a turntable between the two creels.

Circle T-9 on Reader-Service Card

Eliminate "DRAG-INS"

THREAD CUTTER

by JACOBS



- REDUCES LOSS MOTION.
- LIGHTWEIGHT.
- CUTS AND HOLDS all types of yarn.
- FITS all battery looms. Simple construction.
- SAVES DOWN TIME.
- EASIER, FASTER to fix.
- POSITIVE opening and closing eliminates "drag-ins".

Let a JACOBS Service Engineer show you all the cost savings this new Thread Cutter can give you now!

THE BULLARD CLARK COMPANY

Be sure to see the "Verybest" Thread Cutter at the Southern Textile Exposition in Greenville, S. C. Section 443, Annex No. 1

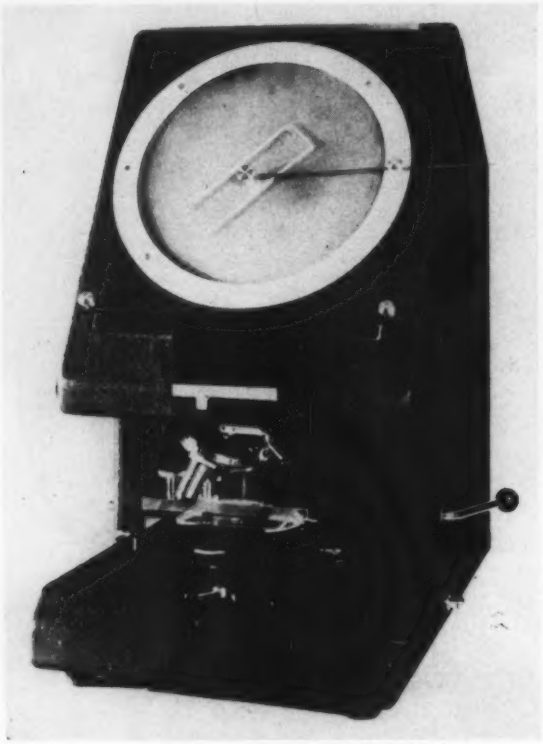
JACOBS

SOUTHERN DIVISION
Charlotte, N. C.

NORTHERN DIVISION
Danielson, Conn.

For more information, write direct or use Reader Service post card.

Microscope Projector



FIBROSCOPE combines a microscope with a built-in illuminating system and elements that project an image on the 8-in. ground-glass screen. Made by William J. Hacker & Co., Inc., 82 Beaver St., New York 5, N. Y., the Fibroscope allows discussion by a group of observers. The range of magnifications is 75X to 500X. For photomicrography, the screen is replaced by a rotating disk. The transparent scale is calibrated in 1/100-mm. units.

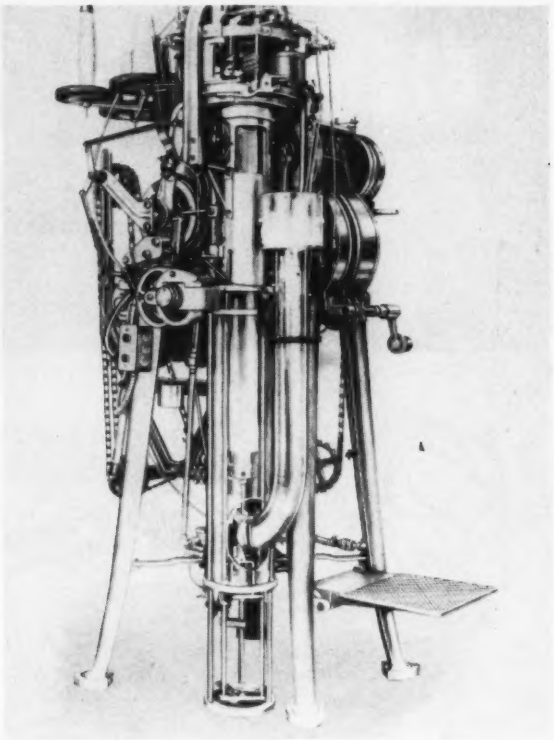
Circle T-10 on Reader-Service Card

Dryer Housing Improved

A new strut used in the construction of Proctor & Schwartz (Philadelphia 20, Pa.) drying equipment provides tighter construction, which means less air leakage, lower heat loss, less contamination, less maintenance, and cleaner operation. Each structural member has two rolled sections that are automatically riveted together. The drying housings are available in steel, stainless steel, aluminum, and in combinations with other special metals.

Circle T-11 on Reader-Service Card

Hosiery Tension Device Provides Clearer Stitch



AUTOMATIC TENSION device on fine-gauge seamless-hosiery machines requires longer machine legs so that tension on the fabric can be applied throughout the length of the hose.

An automatic tension device, made by Scott & Williams, Inc., 350 Fifth Avenue, New York 1, N. Y., supplies tension to seamless hosiery during knitting. The device is particularly suitable for 474-needle machines and 12-den. yarns.

Tension on the fabric from welt to toe provides a clear, even stitch and eliminates tuck stitches and crowfeet in the welt.

The welt is automatically blown down into a holder that applies tension to the fabric on the needles. High machine legs are supplied so that tension can be controlled throughout the stocking to the toe.

When the toe has been knitted, the stocking falls from the needles and is blown through a plastic pipe to a container on the front of the machine.

Circle T-12 on Reader-Service Card

Lintproof Enclosure

A new lintproof enclosure, manufactured by I-T-E Circuit Breaker Co., 119th and Hamilton Sts., Philadelphia 13, Pa., to Joint Industry Conference requirements, assures reliable circuit-breaker operation in lint-laden textile atmospheres. Solid sheet-steel sides and back, with closed welded seams, contain no holes or knockouts. The enclosure is finished in enamel.

A new handle operates the breaker from outside the enclosure. A name plate indicates position of breaker handle at all times, and the handle can be padlocked in On or Off position. A defeater arrangement allows authorized personnel to open the enclosure cover with the breaker in On position. The design includes a double-locking cover, and a neoprene gasket assures a tight seal when the cover is shut.

Enclosures are available with I-T-E-, F-, J-, and L-frame circuit breakers in ratings from 15 to 600 amps., 125 to 600 v. a.c., 125 to 250 v. d.c.

Circle T-13 on Reader-Service Card

Universal 6 machine in plant of Cinderella Knitting Mills

Advanced engineering and a unique combination of features make the Universal 6 ideal for wrapping textiles... Its wide size range—*greater than any other machine available*—enables you to wrap a large variety of items... Its simplicity of operation, ease of adjustment and its speed of 15 to 40 packages a minute add up to important savings... It permits you to choose the wrapping material best suited to your product—Cellophane, Polyethylene, Vitafilm, Pliofilm, Saran, Vinyl, etc.... Moreover, the superior manner in which this machine applies the wrap results in a firmly sealed, handsome package of utmost sales appeal.

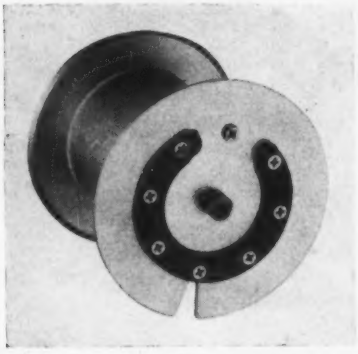
You will find, too, that the Universal 6 is extremely rugged in construction. And to insure your products remaining immaculate, we have made the entire infeed mechanism of stainless steel—all other parts which come in contact with the goods are either brass, aluminum alloy or Teflon-coated.

We'll be glad to give you facts and figures on how the Universal 6 can cut your costs and improve the SALES POWER of your package.

Write for literature on the Universal 6

NEW YORK PHILADELPHIA BOSTON CLEVELAND CHICAGO
ATLANTA DALLAS DENVER LOS ANGELES SAN FRANCISCO
SEATTLE TORONTO MEXICO, D.F.

Lightweight Bobbin For High-Twist Yarn



LIGHT-METAL BOBBIN with 1-lb. capacity is being manufactured by Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia 32, Pa. The take-up bobbin is used in throwing high-twist synthetic yarn.

Circle T-14 on Reader-Service Card

Photoelectric Edge Guide

An improved photoelectric edge guider, called the Linear Edgetrol, has been developed by Airlecton, Inc., Box 151, Caldwell, N. J. It has a wide sensing-head slot and recessed control panel.

No force is applied to the material, and this feature permits accurate edge registration of light, thin materials and heavy materials, even when not under tension.

Another feature of the photoelectric guider is its rapid response, with an accuracy of 1/32 in. or better at up to 60 actuations per minute.

A self-contained reversing contactor permits the Edgetrol to be used with standard-tenter drives, electric or hydraulic, up to 1 hp. Price of the guider is $295.

Circle T-15 on Reader-Service Card

High-Speed Cord Maker

No preparatory winding, warping, or twisting is necessary with the Jonsil cord maker, made by C. G. Sargent's Sons Corp., Graniteville, Mass. The working principle is single-end knitting, and yarns are fed overend from any standard mill package. The cord is delivered to a revolving creel, which is an integral part of the machine.

Production is up to 1,000 ft. per min., and plastic-coating equipment can be attached to make a continuous operation. Electric stop motions are standard, and a red lamp flags an end down. Price is about $1,300.

Typical applications are manufacturing venetian-blind cord, cotton cord, or cotton over a wire core.

Circle T-16 on Reader-Service Card

Model 10 Twister Improved

A new ring-rail counterbalance has been made standard equipment on the Model 10 ring twister made by Universal Winding Co., Providence, R. I. The counterbalance is a series of extension springs attached to the lifter bar at one end and the midstand connection at the other end. For any one frame, the number of springs used depends on the spindle spacing, ring size, and number of spindles.

The counterbalance is set when the frame is erected, and no further adjustments are necessary. New lightweight lifter bar and ring rail, with tubular lifter rods, are used in conjunction with the new counterbalance.

The builder motion of the Model 10 has also been improved with an outer support for greater stability.

These improvements give the twister a smoother ring-rail movement at high traverse speeds.

Circle T-17 on Reader-Service Card

Three Warp-Tying Machines

The new GK-6B and GK-6A models of the Titan warp-tying machine can tie leased or unleased sheets of warp, as well as one leased sheet to another unleased sheet. This feature is of particular interest to mills with diversified production; the old warp can be tied with an end-and-end lease taken from the harnesses to the new warp without a lease.

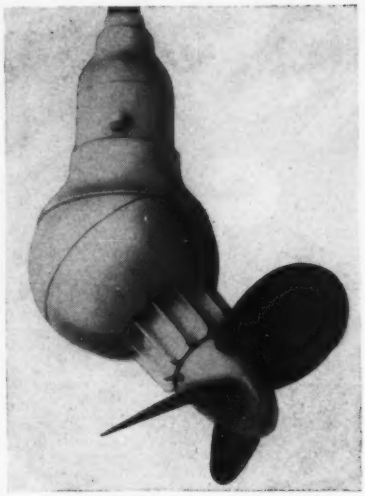
The Titan GK-6A, with a lease detector, will control tying of leased warps of any spun yarn; the detector will stop the machine automatically if there are any flats (two ends together) in the lease, whether in the new or the old warp sheet.

The Model GK-6C Titan ties unleased warps only and is designed particularly for the plain-cotton branch of the industry. It retains the Titan feature of double-controlling every end tied.

Edda International Corp., 468 Fourth Ave., New York, N. Y., represents the Titan company in America.

Circle T-18 on Reader-Service Card

Cotton-Frame Cleaner



OVERHEAD FAN for cotton-spinning frames has rubber blades fixed on a universal joint. The fan rotates slowly, and the blowing path sweeps half of each side of two adjacent frames. No rails are used, and two fans per frame are needed. Cost is about $140 per fan. Available from Stellite American Corp., 60 E. 42nd St., New York, N. Y., the Zephyl fan uses 60 watts.

Circle T-19 on Reader-Service Card

Packs 1,500 Bags per Hour

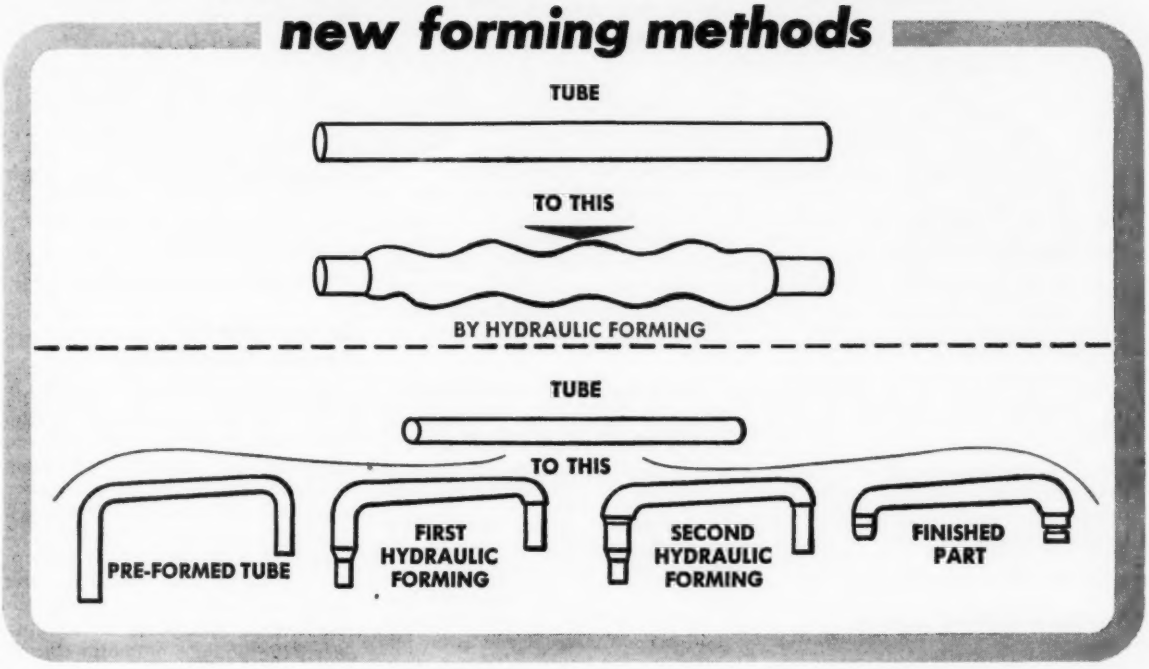
THE SPEEDY BAG PACKAGER, a semiautomatic machine manufactured by Errick International Corp., 286 Fifth Ave., New York, N. Y., opens up the bag with air pressure and makes loading easy; flap and lip bags are opened automatically. Floor space required is about 4 sq. ft.; cost is $240. Production is up to 1,500 packages an hour with a conveyor system. The machine can be adjusted to the width and size of the bag.

Circle T-20 on Reader-Service Card

CONTINUED ON PAGE 281

IF YOU PRODUCE PARTS FROM STEEL TUBING...

it may pay you to investigate new forming methods



Often a single change made in your production procedures can result in a better product with savings in fabricating time and cost. And even if your current production methods are "good enough", you can't afford to overlook any improvement which might be adapted to your operation. For example, hydraulic forming is a unique, simple forming method having advantages—where applicable—which include fewer operations to produce the finished part, reduced tool costs and lower maintenance costs.

But whether you form your product hydraulically or by other methods, the original tubing you choose must be *right* . . . must have the precise combination of formability and strength required for your product. Only with the *right* tubing can you make that product to quality standards, at the lowest possible cost to yourself. And whatever your manufacturing requirements may be, B&W Mechanical Tubing can meet them. It is available in the fullest range of analyses, sizes, finishes and properties, and *one* combination of these is tubing tailor-made to your requirements.

Call for Mr. Tubes. He's your link to B&W through our Regional Sales Offices and a nationwide network of experienced tubing distributors. Get the benefit of his complete knowledge of tubing for all applications to help you match tubing to your requirements and to point out practical fabricating economies.

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

B&W SEAMLESS and WELDED TUBES

TA 4055(M)

NEW Dyes AND Chemicals

Fire-Resistant Agents For Silk, Cotton, and Viscose

Treesdale Laboratories, Pittsburgh, Pa., has announced the development of the Firebuff compounds, semidurable fire-resistant agents said to provide fire resistance beyond the requirements of the Flammable Fabrics Act. Treatment with the agents can be modified to allow the incorporation of other finishes.

Circle D-1 on Reader-Service Card

Fugitive Tints for Natural And Synthetic Fibers

Charlotte Chemical Laboratories, Charlotte, N. C., has announced that it has obtained a license from Dr. Edward A. Murray to manufacture and sell Rinsefree tints, a new line of tinting colors for natural and synthetic fibers. The tints are said to be highly fugitive even after steaming. The colors are supplied as concentrated water solutions ready for dilution and application to the stock by conventional methods.

Circle D-2 on Reader-Service Card

Surface-Active Agent

A nonionic surface-active agent said to combine high detergency value with fast wetting ability has been announced by E. F. Houghton & Co., Philadelphia, Pa. Known as Cerfak 1400, the new product reportedly can be used in nearly all textile wet-processing operations where a detergent or wetting agent would increase efficiency.

According to the producer, stock solutions of the agent, even those including chlorine, can be made up in advance and held until needed. Cerfak 1400 is said to mix quickly and thoroughly in any proportion with water, to be effective over the entire pH range, and to be highly efficient in low concentrations.

Circle D-3 on Reader-Service Card

Gum for Sizing, Finishing, and Thickening

The Burtonite Co., Nutley, N. J., announces Burtonite #7, a gum useful in sizes, finishes, and thickeners for printing pastes. The product is said to produce an approximately neutral water solution and to work well in low pH mediums.

Circle D-4 on Reader-Service Card

Antistatic Agent For Synthetic Fibers

A new antistatic agent has been announced by E. F. Houghton & Co., Philadelphia, Pa. Known as Anti-Static Agent 575, the product is said to eliminate or greatly reduce processing difficulties caused by friction-formed static electricity. The agent is a water-soluble liquid and forms a semitransparent solution when made up for use. It reportedly can be used in conjunction with processing oils or stock lubricants in practically any operation.

Circle D-5 on Reader-Service Card

Sizing for Synthetic Fibers

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has announced Elvadex, a new alkali-soluble vinyl-acetate copolymer.

Previously sold on an experimental basis under the code name Elchen 1273, the material is said to have found principal acceptance as an off-loom finish for dope-dyed acetate yarn and as a sizing for Dacron, Orlon, and other synthetic fibers in filament form.

Circle D-6 on Reader-Service Card

Brown Dye for Cotton and Viscose

A new soluble vat brown dye, an addition to the line of leuco ester colors, has been announced by the Dyestuff Dept., American Cyanamid Co., Bound Brook, N. J. The dye, Calco Soluble Vat Brown BY, is a versatile printing color suitable for roller or screen printing on cottons and viscose alongside azoics, pigments, or other soluble vats where acid ageing is used.

Vat Brown BY reportedly has excellent leveling properties for dyeing cotton, rayon, and linen dress goods and shirtings. It shows a solid-surface appearance when used on tightly woven cotton fabrics, slub-weave rayons, and mercerized broadcloths. The producer reports the new soluble Vat Brown BY is effective on wool where lightfastness and wetfastness are required.

Circle D-7 on Reader-Service Card

Blue Dye for Cotton and Rayon

Chlorantine Fast Blue 2BLL, a lightfast blue dye for cotton and rayon, has been announced by Ciba Ltd., Basle, Switzerland. The dye is recommended for yarn, knit goods, and dress materials. Although it is suitable for direct printing, the dye is not dischargeable.

Circle D-8 on Reader-Service Card

Surfactant for Textile Processing

Swan-Finch Oil Corp., New York, N. Y., has announced the development of Swantex, a new low-foaming surfactant for wetting, penetrating, surface-tension lowering, detergency, dispersing, dye carrying, and scouring.

Swantex reportedly is soluble in solutions of acids, alkalis, and calcium. It is said to be highly soluble in water, hot or cold, and to rinse quickly and completely. According to the producer, the product promotes efficient and stable dye dispersions and a high exhaustion of the dyebath.

Circle D-9 on Reader-Service Card

Gray Dye for Cotton and Rayon

Chlorantine Fast Grey NGLL, a dye that yields lightfast neutral gray shades on cotton and rayon, has been announced by Ciba Ltd., Basle, Switzerland. The dye is suitable for application in circulating machines since it is soluble and not affected by metals; and it is recommended for knitting yarns, knit goods, and dress materials.

Circle D-10 on Reader-Service Card

Vinyl Sponge for Textiles

The Watson-Standard Co., Pittsburgh, Pa., has announced a new vinyl-sponge plastisol. The compound is furnished as a pourable liquid and expands on curing at 350 to 400° F. to a uniform vinyl-sponge coating. Normal coating and curing equipment

Outstanding performance of MICROROK bottom roll in this carbonizer resulted in substantial economy of maintenance costs.

STOWE-WOODWARD
MICROROK® BOTTOM ROLLS

To provide the squeezing action which insures uniform acid extraction and eliminates shaded goods, the MICROROK roll above was installed in a carbonizer in a well known textile finishing plant.*

More than 2 years of round-the-clock operation have demonstrated exceptional performance. Its unusual wearing qualities were proved when micrometer tests showed not even .001" loss of crown. Chemically inert, the MICROROK roll is impervious to acid deterioration.

Based on this extraordinary record of performance, the plant superintendent estimates that the MICROROK roll should provide continuous maintenance-free service for 5 years.

Compared with conventional rolls normally requiring regrinding at least annually, this represents an important saving . . . both in maintenance costs and in the elimination of down time involved in the removal of hard-to-get-at bottom rolls.

Ask your Stowe-Woodward representative about MICROROK rolls.

*Name supplied on request

STOWE-WOODWARD, Inc.

NEENAH, WISCONSIN - NEWTON 64, MASS. - GRIFFIN, GEORGIA

used in applying other vinyl dispersions can be used satisfactorily.

A chemical blowing agent incorporated into the plastisol causes expansion at atmospheric pressures. The compound can be modified by the manufacturer to various densities, tear strengths, elongations, and chemical resistance for different end uses. The compound can be cured, rolled, and then later expanded by supplying additional heat. It will not rot or stain; is virtually odorless, scuff-resistant, and perspiration-resistant; and will not harden with age. It can be used as rug padding or underlaying or as a laminate.

Circle D-11 on Reader-Service Card

Vydul—Delustrant For Nylon Tricot

Vydul, a new type of delustrant for nylon-tricot fabrics, has been developed by the Vikon Chemical Co., Cambridge, Mass. The Vydul products are cationic resin dispersions that can be exhausted in a dyebeck or padded. They are said to produce a yellowing-resistant finish with excellent durability to washing.

Circle D-12 on Reader-Service Card

Fluorescent Agent For Bleaching

A new bleaching agent, Blankit IA, has been announced by Badische Anilin- & Soda-Fabrik A.G., Ludwigshafen, Germany.

Blankit IA is a combination of stabilized sodium dithionid with a fluorescent substance and is produced as a durable yellow-brown, water-soluble powder. Its effect is based on its strong reducibility and on its capacity to impart to other materials the physical property of absorbing the ultraviolet rays from davlight and reflecting them as visible blue light.

The product is recommended for bleaching wool, silk, and rayon and for afterbleaching cotton and bast fibers. It is said to reduce bleaching time or the amount of bleaching agents used.

Circle D-13 on Reader-Service Card

Detergent for Wool

The Nopco Chemical Co., Harrison, N. J., has announced the development of a synthetic detergent said to have excellent scouring properties. The product, called Nopco 1479-A, is a liquid fatty alkylolamide condensate with good cleaning properties. It has a heavy body consistency and high foaming action.

Circle D-14 on Reader-Service Card

Water Repellent For Wools and Synthetics

Applied to either synthetics or woolen fabrics, Dow Corning 105 Emulsion, recently developed by Dow Corning Corp., Midland, Mich., is said to impart durable water repellency, resistance to staining from water-borne soils, and a fuller hand. The finish does not alter the appearance, color, or porosity of the fabric.

The finish is designed to simplify the removal of greasy spots from the fabric so that most suiting materials and upholstery fabrics finished with 105 Emulsion can be spot cleaned with solvent without leaving a ring.

The product is a stable, water-dilutable emulsion supplied at a concentration of 40% active silicone.

Circle D-15 on Reader-Service Card

Bluish-Violet Vat Dye For Cotton and Rayon

National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y., announces National Carbanthrene Brilliant Violet RK Double Paste, a recent addition to National's line of anthraquinone vat dyes. The dye produces bright bluish-violet shades of good all-round fastness on cotton and rayon.

In its leuco form, the dye is said to have good solubility, to be well suited for application in all types of machines, and to be applicable by the various pigment-impregnation methods as well as by the reduced dyeing method. According to National, the dye is rated as having maximum fastness to light in full and medium shades and excellent in light shades. It is suitable for rubberized and resin-finished materials.

Circle D-16 on Reader-Service Card

Yellow Dye for Cotton and Rayon

National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y., has announced National Erieform Yellow GR, an addition to National's line of nondusting direct dyes. The dye produces moderately bright shades of medium yellow on cotton and rayon.

Aftertreatment with formaldehyde and acetic acid is said to improve wetfastness without affecting lightfastness or the dye's dischargeability with either alkaline or neutral pastes. Aftertreatment with urea-formaldehyde changes the shade slightly but reportedly increases the fastness to wet processing and light.

Circle D-17 on Reader-Service Card

Rexodull—Delustrant For Nylon-Tricot Fabrics

A delustrant for nylon tricot has been developed by Emkay Chemical Co., Elizabeth, N. J. The product, Rexodull CNY, is a homogenized dispersion of titanium pigments combined in a cationic resin carrier and binder. The product can be applied on a padder or quetsch or can be exhausted in a dyebeck. It is said to produce a durable dullness that is resistant to washing and yellowing from heat and storage.

Circle D-18 on Reader-Service Card

Agent for Dye Mixing

A new dyeing agent, Eulysin MP, has been developed by Badische Anilin- & Soda-Fabrik A.G., Ludwigshafen, Germany. The agent is a mixture of a new water-soluble organic solvent and a surface-active protective colloid and is reportedly practically neutral. It is said to moisten, equalize, disperse, and promote the solution of coloring substances; and it can also be used to clean dyeing equipment.

Circle D-19 on Reader-Service Card

Bright Blue Dye For Cotton and Rayon

National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y., has announced National Solantine Blue BLL, a new direct dye that produces reddish shades of moderately bright blue on cotton and rayon.

This dye is said to be fast to light, with medium-depth rayon dyeings rated 8, the maximum AATCC rating.

Aftertreatment with urea-formaldehyde or melamine resins makes the shades slightly greener and brighter, with little loss in lightfastness. This lightfastness loss can be eliminated by the addition of National Naccufix to the resin, it is said.

Circle D-20 on Reader-Service Card

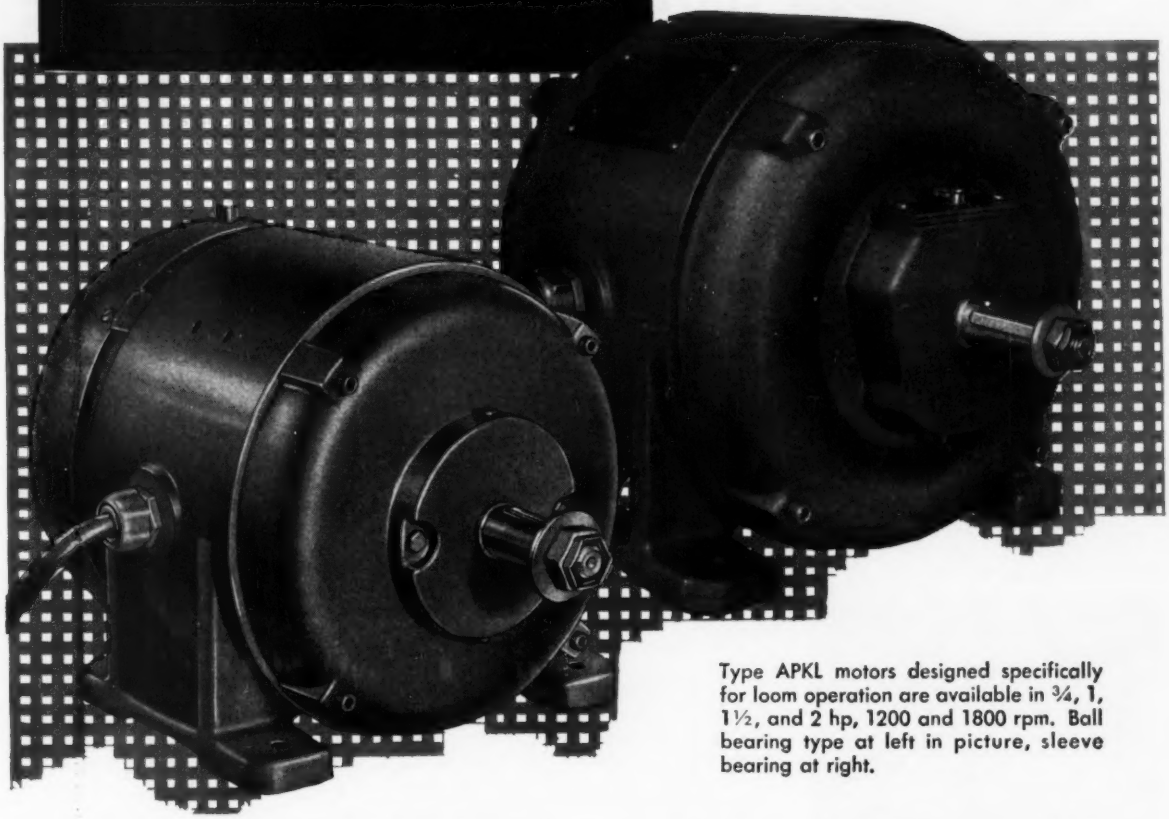
Accelerator for Melamine Resins

A new accelerator for use with melamine resins has recently been developed by American Cyanamid Co., New York, N. Y. Known as Aerotex Accelerator MX, the product is designed to increase the degree of cure of the resin and thereby increase the resin efficiency. Used with melamine resins, the accelerator improves resistance to chlorine yellowing.

Circle D-21 on Reader-Service Card

New Loom Motor

Specially built for high speed loom operation



Type APKL motors designed specifically for loom operation are available in ¾, 1, 1½, and 2 hp, 1200 and 1800 rpm. Ball bearing type at left in picture, sleeve bearing at right.

This entirely new loom motor design is a result of intensive Allis-Chalmers research into the true nature of loom loads at speeds up to 200 picks per minute and more. Several hundred motors of the new design have had more than a year of test in regular mill operations.

Features Proved in Operation

Cast-iron frame is totally enclosed, non-ventilated type that excludes all lint from internal parts, holds bearings in correct alignment and maintains uniform air gap. Feet are machined in a single operation, assuring perfect alignment and easy mounting.

Electrical design is generous. The stator is extra large and of heavy construction to provide electrical capacity and physical strength to meet stresses of rapid load oscillation. The rotor is of largest practical diameter in order to provide optimum flywheel effect (Wk^2). The motor operates at very stable speed under pulsating load conditions. A-4342

Allis-Chalmers loom motors are available with flywheel where required. Get complete information from your nearby A-C district office or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 51B7111B.

ALLIS-CHALMERS

THIS IS NO. 106 OF A SERIES ON

GETTING THE MOST FROM TWISTING

Information about twisting designed to show improvements in twisting equipment and new ideas in the twisting operation

HOW TO ADJUST CENTERING EYES —UNIRAIL® UPTWISTER

Balloon characteristics and tension on yarn as it comes off the supply bobbin on an uptwister are affected by the location of the centering eyes. For proper ballooning, and minimum tension, the centering eyes must be located at the correct distance above the supply pirn or bobbin in addition to being centered over the spindles.

Generally, best results are obtained when the distance between the top of the supply bobbin and the centering eye is equal to three-quarters of the head diameter of the bobbin. Setting the eye at greater distances may cause excessive tension and multiple balloons with the result that the yarn drags over the bobbin head.

Depending on redraw operations or the type of supply bobbin used, the setting may vary slightly from the figure given above, but in any event the centering eye should be adjusted so that the yarn clears the bobbin head.

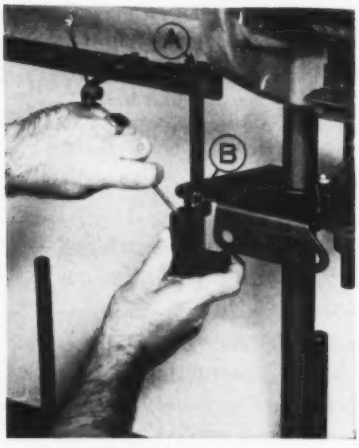


Fig. 1 Adjusting centering eyes to correct heights.

Ordinarily it isn't necessary to readjust the centering eyes on the Unirail Uptwister. They are set at our plant before the machine is shipped and checked again by our erectors when they install the uptwister in a mill. These settings are made to a particular bobbin specification. However, if the mill starts to use a different type of supply — for example, if they change from a pirn to redraw bobbin — the centering eyes should be adjusted to suit the new supply bobbin. Also, if the belt is replaced by one of a different thickness, the eyes should be centered again over the spindles, for the new belt will change the running position of the spindles.

The adjustment to set the centering eyes at the correct height can be made quite easily. The centering eye girts on each section can be raised or lowered so that a group of centering eyes can be adjusted at a time. If they have to be moved only a short distance the hex socket screws that hold the girt onto the vertical support rods at (a, Fig. 1) can be loosened and the girts raised or lowered until they are at the correct height. For greater distances, the screws (b) should be loosened and the support rods raised or lowered.

After the first section is adjusted to the required height, a piece of wood or metal cut to the proper size can be used as a gauge to set the remaining sections quickly, as shown in Fig. 1.

Fig. 2 Adjusting centering eye with gauge.

The eyes can be centered over the spindles very easily with the gauge AY-ER-1X shown in Fig. 3. Adaptors to fit the various spindle blades can be supplied with the gauge.

When making the adjustment, the spindle is placed in the running position with the gauge on it, as illustrated in Fig. 2, and the centering eye adjusted to the conical projection on the arm of the gauge.

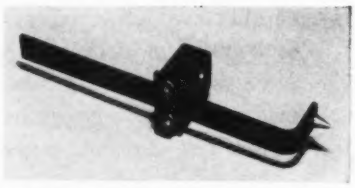


Fig. 3 Gauge for use in centering the eyes over spindles.

August 1954 — 23.4.2A

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

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LETTERS FROM READERS

Round Table

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD
330 W. 42nd St., New York 36, N. Y.

CAUTION: NOT FOR COTTON

Dear Editor:

As I read your article on "Weaving Operations at Chatham" [TW, July, '54, p. 91], I was quite disturbed by the illustration shown in the lower lefthand corner on page 92 that shows an open incandescent light in the midst of a heavy lint deposit. The caption ends with the sentence, "The lint doesn't catch on fire."

This picture is actually quite a shock to anyone who is fire-protection minded because we all know that most forms of lint, such as cotton and many synthetic fibers, will ignite from the surface temperature of an open lamp bulb.

Apparently the real reason why this arrangement at Chatham does not often cause the lint to catch fire is not in the arrangement of the equipment, the size of the lamps, or other details, but the very important fact that it is used only on looms running wool. It is my understanding that Chatham does not use this arrangement and would not use it on looms running materials producing a combustible lint, but that fact was not emphasized in your article. Therefore, I am calling it to your attention.

. . . Our inspectors have for a number of years been aware of this arrangement at Chatham. We have objected to it; but because no more satisfactory method to do the particular job has been devised and because it is restricted to looms weaving wool, we have reluctantly accepted it. We would be very much concerned if, as a result of the picture you have shown, other mills, particularly those handling cotton or other combustible fibers, should make a similar installation. I am sure they would encounter serious trouble.

SWAFFIELD COWAN
Engineer
Factory Insurance Assn.
Charlotte, N. C.

[*We have checked with Chatham Mfg. Co. and found that the mill does not permit use of these lights unless the loom is running all-wool or nearly all-wool. None are installed under jacquard looms. The looms are cleaned at least once a day; so deposit of lint is not severe.*—EDITOR.]

ALABAMA'S COTTON MILLS AND IMPROVED COTTON

Dear Editor:

. . . We were interested to note that one of our featured programs has been given national and international publicity in TEXTILE WORLD ["This Community-Relations Program Spreads Across a Whole State," June, '54, p. 39].

Although the story of our Cotton-Improvement Contest is a mighty well-known tale to Alabamians and many people in adjoining states, this is the first time a top textile magazine has told this unique Alabama story to textile-minded people everywhere your publication goes.

DWIGHT M. WILHELM
Executive Vice President
Alabama Cotton
Manufacturers Assn.
Montgomery, Ala.

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"I finally did it, Boss. A fabric you can really sink into!"

Round Table (Continued)

DOFFER PIECE RATES

Dear Editor:

The best method I know of paying doffers under piece-work rates is to pay them by the box or doff. This calls for a doff checker, who checks the doffs three times a shift and records the doffs and credits them to the individual or paired doffers.

Yarn is shipped immediately after checking. A few boxes remaining after shipping that do not comprise a load are recorded as "boxes on floor" and are deducted at the next checking. Naturally the doff checker has to be alert for procrastination, but this is a minor factor.

A doff (frame load) is divided into total assigned spindles or task for doffs (in this case boxes), and the quotient is the number of boxes per week a doffer must doff to earn his wages. Boxes per week divided into wages equals rate per box.

This method is very simple and highly effective and keeps the standard up. Fast doffers are always looking for an extra frame or two, and slow doffers must make the minimum or are eventually replaced. Any mill can work out this problem easily.

As far as possible, all doffers should be placed on full rotative single-yarn-number doffs. Mixed yarns, which have varying doff intervals, should be in special sets; and spare doffers, spare hands, and trainees should be assigned to these doffs. Occasionally, if necessary, doffers on rest periods can be given an extra box or two if they so desire.

Actually, this procedure can be streamlined to work effectively with a minimum of effort. It is better than paying by the hank because much clerical work is eliminated; the doff checkers handle and make up the payroll. One doffer per shift is all that is needed for a mill running 50,000 spindles.

MARCUS C. GROSS
Dracut Center, Mass.

Questions AND Answers

Helanca Yarn Can Be Used For Underwear

Technical Editor:

Can Helanca yarns be knitted into underwear garments? (9798)

Helanca yarns can be knitted on full-fashioned and circular machines to make underwear garments.

Women's briefs are made on 45-gauge full-fashioned hosiery machines from 70-den. Helanca yarn. The backs and fronts are shaped on the knitting machines. A welt is knitted at the top to receive an elastic band, and reinforcing gussets are knitted at the crotch. The garments are seamed down the sides.

Pilot Full Fashion Mills, Inc., developed these briefs and has applied for a patent but plans to license some mills to make these garments.

Men's briefs are cut from tubular fabric made on 14-cut circular rib machines with 70-den. yarn. The fabric is made with a long stitch, and little tension is placed on the yarn during knitting.

Backwinding Yarn Improves Knitting

Technical Editor:

We knit 18s carded marl yarn on 18-cut circular jersey machines. Our seconds rate was high until we backwound the yarn. Why does backwinding reduce holes and make a better product? (9811)

One of the first hosiery mills to knit 10-den. nylon yarn could not run the yarn successfully until the yarn had been redrawn from one pirn to another pirn. Redrawing loosened the yarn on the package so that the threads did not stick during knitting and cause intermittent tension on the yarn and tight stitches that occasionally broke out in holes.

A similar problem exists in cotton yarns. Yarns that have been in storage for some time decrease in knitting qualities. It is advisable to backwind just before knitting. A winding machine is installed in some knitting rooms, and yarn wound in the morning is knitted in the afternoon.

The loosening of the yarn on the package is, however, only part of the answer to the problem. During backwinding, many faults in the yarns that will cause troublesome knitting are removed. These faults include slubs, bad knots, thin places, neps, foreign matter, and excessive fly.

Lubricating yarn immediately before knitting will often make yarns knit better. If yarn is waxed or oiled several weeks before knitting, the yarn tends to get dry and brittle.

There is some objection to using waxed yarns on fine-gauge interlock machines. The wax tends to accumulate on the needles to cause the latches to stick and produce tuck stitches; so perhaps an emulsion that won't dry out too soon is the answer.

Rub Spanish Powder On Composition Rolls

Technical Editor:

We use composition rolls in our spinning mill but find that we have to keep conditions down to 48% r.h. to get the best results. We get 0.6 breaks per 100 spindles per hour with 48% r.h. and 30 breaks per 100 spindles per hour with 52% r.h. on our roving frames.

On the spinning frame, the yarn seems to climb up around the top rolls, chiefly in the rear zone. We've tried varying partial drafts, using heavier revolving clearers, and using flat clearers; but we have not met with success. Ends down are doubled on the spinning frame when we change from 48% to 52% r.h.

We have a central-station conditioning installation, and our climatic conditions are foggy and damp; but we want to work at 52% because we get less fly and the yarn is improved.

Do you have any suggestions other than going back to leather-covered rolls? (9812)

Your climatic conditions could cause sticky top-roll-cover surfaces, which would result in roll laps and end breakages. Rub fine Spanish Whiting powder on the surface of a few

Humanics — A TW Brief

Know Your Workers

A good superintendent or overseer who has been around a mill for some time can sense when something is wrong in a department before he knows what it is.

If you have developed this sixth sense, you have a better chance of knowing what a gripe or complaint really means. The first requirement for the supervisor who wants to develop this sixth sense is to keep a level head. You will have to find out how your workers feel about things, not just what they think.

test rolls. This treatment may overcome moisture condensation on the rolls.

Check the fineness of the abrasive used in roll buffing. A rough surface can cause your roll lapping.

Check the moisture content of the back stock in the spinning creel. Dry stock can cause static and lapping troubles.

Check your humidity conditions right at the frame with a sling psychrometer. Correct air circulation is important. Pockets of moisture-laden stagnant air can cause trouble.

Don't forget that temperature conditions are also important in the spinning room. Some mill men prefer 80° F. in the spinning room.

Label Printing Depends On Balance of Ingredients

We're having trouble printing cloth labels. How can we get a better impression? (9681)

The best suggestion is to stiffen the ribbon with corn starch. If better penetration of ink is needed, add a sulfonated oil to the starch finish.

Labels do not offer much resistance to printing ink; so the impression often blurs. In this case, a wax emulsion added to the starch offers resistance to ink penetration.

To get a mark on a printing label, you need a delicate balance between surface impression and ink absorption. Experimentation is needed with a penetrant, a stiffening agent such as starch, and a blocking agent such as a wax emulsion.

The above combination is suggested; but glue and casein, as well as many synthetic resins, can be used for sizing.

Water and Steam Needs Of Modern Finishing Plant

Technical Editor:

How much steam and water are necessary to finish a pound of cloth in a modern finishing plant?

Our plant, which will have all modern machinery, is to employ the latest finishing processes and is to operate under excellent conditions. (9538)

The information in the tables at the right has been broken down wherever possible into the amount of steam or water required in the different processes per pound of cloth, except in dyeing, which would require neither steam nor water continuously.

Estimated Steam Consumption

Based on 4-yd. goods

	Steam (lbs. per hr.)
Bleaching:	
(Continuous method — 100 yds. per min.)	
Desize saturator	100
J-box	1,500
Caustic saturator	100
J-box	1,500
Peroxide saturator	100
J-box	1,500
Total — Bleaching	4,800 lbs. per hr., or 3.2 lbs. of steam per lb. of cloth
Mercerizing:	
(50 yds. per min.)	
Dry cans (20)	3,000
Caustic saturator	1,200
Caustic heaters	8,000
Total — Mercerizing	12,200 lbs. per hr., or 16 lbs. of steam per lb. of cloth
Finishing:	
(75 yds. per min.)	
Dry cans (20)	3,000
Starch mangle	350
Tenter dryer	10,000
Steam calender	200
Total — Finishing	13,550 lbs. per hr., or 12 lbs. of steam per lb. of cloth
Shrinkage process: (75 yds. per min.)	1,000 lbs. per hr., or 1 lb. of steam per lb. of cloth
Dyeing:	
Package	650 lbs. per hr.
Continuous	5,000 lbs. per hr.
Jig	250 lbs. per hr.

Estimated Water Consumption

Based on 4-yd. goods

	Water (gals. per hr.)
Bleaching:	
(Continuous method — 100 yds. per min.)	
Desize saturator	650
Rope washer	6,000
Caustic saturator	650
Rope washer	6,000
Peroxide saturator	650
Rope washer	6,000
Rope washer	6,000
Total — Bleaching	25,950 gals. per hr., or 17 gals. per lb. of cloth
Mercerizing: (50 yds. per min.)	22,500 gals. per hr., or 30 gals. per lb. of cloth
Finishing:	
(75 yds. per min.)	
Water mangle	2,500
Starch mangle	200
Total — Finishing	2,700 gals. per hr., or 2.5 gals. per lb. of cloth
Shrinkage process: (75 yds. per min.)	500 gals. per hr., or 0.5 gals. per lb. of cloth
Dyeing:	
Package	1,000 gals. per hr.
Continuous	3,000 gals. per hr.
Jig	250 gals. per hr.

Kinks AND SHORT-CUTS

How To Cut Training Time for Cloth Inspectors

HAND LOOM was used to reduce the training time of six new cloth inspectors by two weeks.

We recently needed six new inspectors in a hurry in our gray-goods cloth room. We had the girls available, but none of them had worked in the cloth room or weave room.

To grade cloth to our standards, inspectors must know cloth terminology and the names of defects. They must also know the basic principles of weaving. But we did not have time to leave the girls in the weave room to learn these things.

We hit on a method of training the girls as inspectors quickly.

First, they were left with experienced inspectors to learn to operate inspecting machines, to use pick needles, and to become acquainted with the general methods of grading. The time required for this learning was from 4 to 8 hrs.

Next, the girls were taken two at a time to a small homemade hand loom in an isolated area of the cloth room. The loom contained a coarse warp drawn on two harnesses.

The shift supervisor showed the girls the major parts of a loom and how they operate. Then they were given a list of cloth terms and major defects generally used. The supervisor went through the list and showed the girls each item.

Cloth defects such as mispicks, double ends, wrong draws, and others were illustrated on the hand loom. The girls were also shown how the defects were made and how to recognize them.

Then the girls were given a copy of our point system for grading cloth and were shown how it works.

They were assigned to inspecting machines and started inspecting plain cloth with defects easy to find. When a trainee came to a major fault, she was required to show it to the supervisor and name it. If she were wrong, she was corrected.

By the end of the second week of this training, all the girls were inspecting our regular cloth.

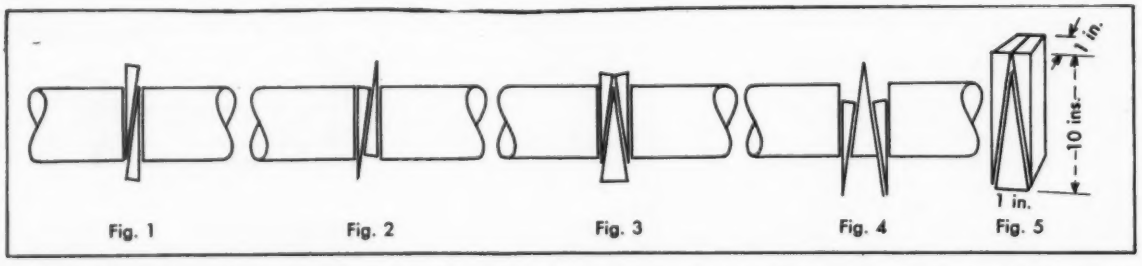
The hand loom shortened the anticipated training program by two weeks. *Jay W. Bliss, Jr., Brunswick, Me.*

How We Remove Bearings on Spinning-Frame Drums

The drums on most spinning frames are coupled by a short shaft that revolves in a supporting bearing on the frame. After long periods of use, these shafts or bearings have to be replaced. But it is often very difficult to pull the drums apart without damage to the thin cast-iron end flanges, which are easily broken if hammered on the edges.

A set of homemade mild-steel wedges helps us do this difficult job easily, quickly, and with no damage to the end flanges. Two thin wedges are inserted on each side between the outer edges of the end flanges. (See Fig. 1.) Light blows are struck simultaneously on the large ends of both pairs of wedges until they are brought in the position shown in Fig. 2. Then one wedge is turned upside down. The end of one of the thicker wedges is inserted between the two thinner wedges in place on each side of the end flanges (Fig. 3) and is driven in with light blows until it is in the position shown in Fig. 4.

The opposite pairs of wedges are driven in equally to keep the edges of the two flanges parallel and prevent bending of the shaft. The whole set of six wedges can be cut from two pieces of square stock as shown in Fig. 5.

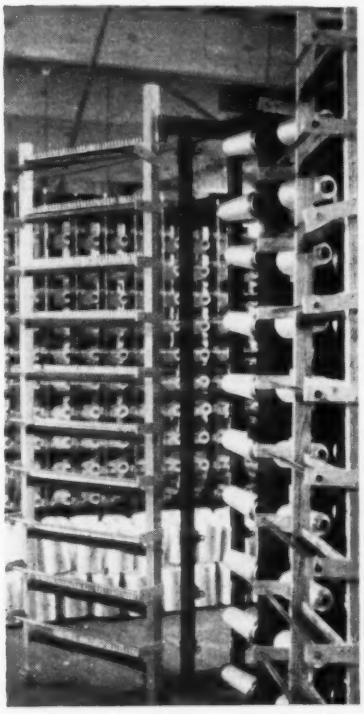


PAIRED WEDGES separate bearing surfaces, as shown in Figs. 1 and 2. After one wedge is turned upside down, a larger wedge is inserted to finish the job (Figs. 3 and 4). Both large and small wedges can be cut from 1-in.-square stock, as shown in Fig. 5.

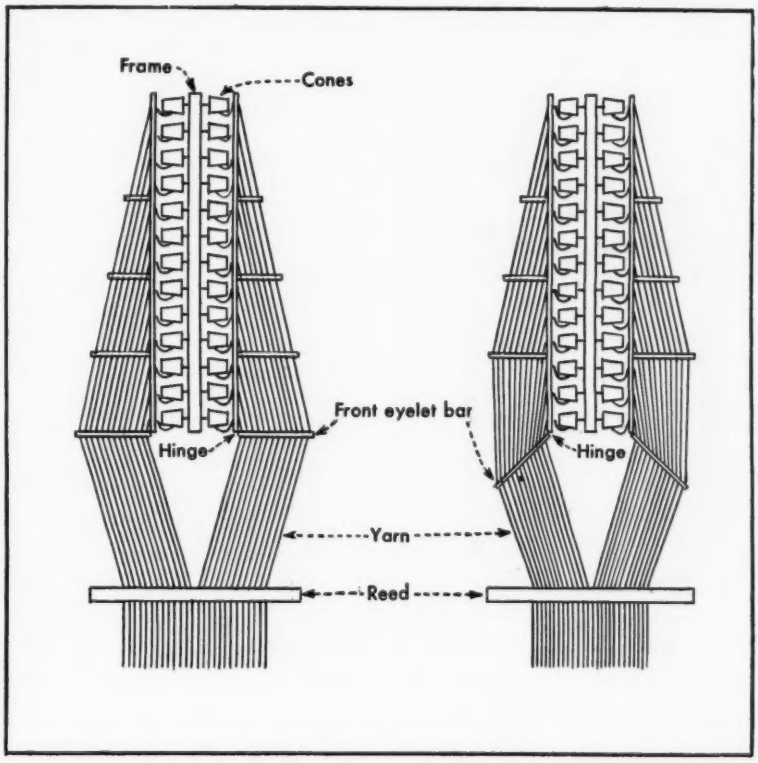
Hinged Eyelet Bar Makes Warpers' Work Easier

The creelers in our warping department were worried about disheveling the threads when yarn cones ran out and new cones were replaced . We overcame the difficulty by attaching a hinged front eyelet bar on the creel. We simply swing the outside of the bar toward the reed while a cone is replaced and then swing the bar back before we restart the warper.

The front eyelet bars are fixed to brackets on 2x1-in. wooden uprights and hinged to the creel front. The uprights swing on casters. *Hokao Fukaya, Katsuyama, Japan*



FRONT EYELET BAR is fixed to the creel front with two hinges. Casters on the upright allow the bar to be swung forward for easier creeling.



LAYOUT of creel shows how the hinged front eyelet bar reduces the width of the yarns to allow cones to be replaced easier.

$500 for Best Kink in 1954

$25 for Best Kink in Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men.

In cases of ties, duplicate prizes will be awarded.

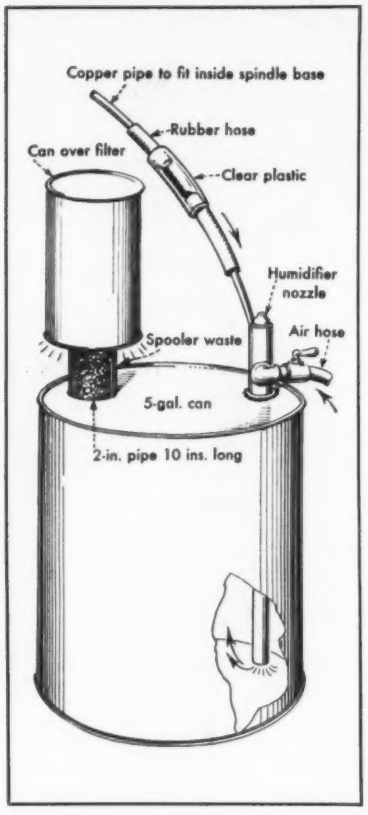
RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1954.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

Kinks and Short-Cuts

How We Remove Oil From Ball-Bearing-Spindle Bases



VACUUM CLEANER for spindle bases uses an old atomizer set in a 5-gal. can. Air causes a suction in the rubber hose and brings oil to the can. Excess air escapes through the waste-packed vent in the can top.

We've developed a neat apparatus to remove the oil from our ball-bearing-spindle bases.

We use the mill air supply to create a suction, draw the oil out, and deposit it in a 5-gal. oil can.

A Type C-6 atomizer from our humidification system was welded to the top of a 5-gal. can. A piece of ¾-in. pipe was first attached to the atomizer so that the pipe would extend to about 2 ins. from the bottom of the can.

The air line is attached to the atomizer in the usual way, but a rubber tube is attached to the water connection.

This tube goes to the spindle base and has a small section of copper pipe at the end to fit inside the spindle base. A section of clear plastic tubing set in the rubber near the end allows us to see when all the oil has been withdrawn from the spindle base.

In operation, air rushes into the can and creates a partial vacuum in the atomizer. This vacuum causes a suction in the rubber tube and brings the oil up.

Air escapes from the can through a 10-in. section of 2-in. pipe welded to the can top. The pipe is packed with spooler waste to filter the vaporized oil, and a tin can over the pipe further controls the vapor. A little spray still escapes, but not enough to do any damage.

Now we can empty the oil in 240 spindles in about 30 mins. *James L. Breed, Phenix City, Ala.*

Best-Kink Award for July

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for July, according to TEXTILE WORLD reader-judges, was:

"Torque Wrench Accurately Sets Let-off Friction-Clamp Cams"

W. M. Land
Lowell, N. C.

Mr. Land is being sent a check for $25 with the compliments of TEXTILE WORLD.

If You're Caught Without a Pipe Wrench

You can use a regular square-jaw wrench to grip a round pipe.

Just paint the pipe with thick paint mixed with finely ground brick dust.

When the mixture becomes tacky, put the wrench on and tighten it securely. The pipe will turn, and you can get your job done.

Wipe the paint and brick dust off while it is soft, and the pipe will not be harmed. *W. E. Warner, Essex, England*

Try This Grid To Check Cleaning Efficiency

How many times have you relied on your own opinion to tell you how good a cleaning job you were doing in opening and picking?

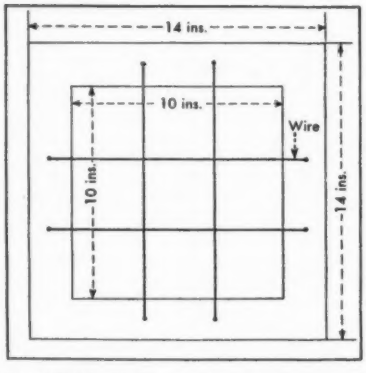
We formerly relied on glance judgment, but now we use a big grid and actually count the pieces of trash. Here's how we do it:

First we cut out a 14-in. square from ¼-in. plywood. Inside this square we cut out a 10-in.-square opening to give us 100 sq. ins. of surface when the grid is placed over some cotton.

Then we divided the big square into nine small ones to make the counting easier. We used No. 18 bare copper wire and spaced it one-third of the way along each side of the opening, as shown in the sketch.

Here's how we use the grid.

We go down to the opening room and put the grid on a bale of cotton open on the floor. We count all pieces of trash and foreign matter larger than a pencil point. Very fine particles are not counted. We make this check on 10 bales.



COUNTING GRID is 14 ins. square over-all and has a 10-in.-square opening in the middle. Fine copper wires divide the 100 sq. ins. into nine equal squares for ease in counting trash in bales and laps.

When this same cotton gets through the picker, we put the grid on 10 laps and make a similar count.

To calculate cleaning efficiency, we total the 10 trash counts in each test. Then we divide trash in the laps by trash in the bales. This percentage is the amount of trash left in the laps.

Cleaning efficiency is simply the difference between the percentage left in and 100%.

Here's an example:

10-bale total	446
10-lap total	137

137 divided by 446 equals 30.72% trash left

100 minus 30.72 = 69.28% cleaning efficiency.

(This test was on 1 1/16-in. SM El Paso cotton.)

We use the test to compare cleaning efficiencies of different mills and also to periodically check each mill against itself. *James R. Wikle, Sr., Charlotte, N. C.*

Attachment Eliminates Jerk-Backs on C-4 Tricolor Looms

When we ran our C-4 tricolor looms as 4x2 looms, we always had a lot of trouble with jerk-backs caused by waste yarn from the bobbin being transferred. Now, we use an attachment to hold the exhausted filling end away from the loom until the temple knife cuts the end.

The attachments, one for each loom, were made in our mill machine shop from steel stock on hand. To make the attachments:

1. Use cold-rolled flat-steel stock 12¾ ins. long, ⅞ in. wide, and ⅛ in. thick to form a hook. (Drop-wire separator bars will do.) Bend the bar as shown in Fig. 1. Cut a hook to hold the filling end in one end of the material. Cut a 7/16-in. slot in the other end and smooth the surfaces with fine emery cloth.

Fasten the slotted end to the protector-rod stop with the capscrew and check nut as illustrated in Fig. 2. Have the hooked end as close as possible to the binder stop without rubbing. The top of the hook should be about 1⅛ ins. above the top of the shuttle box.

2. Make another hook from a 5-in. length of 1¾-in. cold-rolled flat-steel stock ⅛ in. thick. Slot one end, and cut the other end to form a hook as shown in Fig. 3. Drill a hole with a No. 29 drill in the magazine-frame guard as shown in Fig. 4, and tap the hole with a No. 8-32 tap.

Screw the slotted end of the hook to the magazine-frame guard.

3. Make a third hook from 7/16-in. flat stock, as shown in Fig. 6, and bend it at a 45° angle. Drill two holes in the top of the shuttle box at the binder stop, and tap them with a No. 8-32 tap. Then screw the hook to the box top as shown in Fig. 5. This hook is to allow the filling to clear the long upright hook when the lay moves back after the transfer.

After all the hooks are placed on the loom, set the magazine for transferring the filling and bring the lay to the front-center position. Then adjust the hooks as shown in Fig. 6.

When the attachment is adjusted properly, the yarn from a bobbin being transferred is threaded into the hook fastened to the magazine-frame guard and held there until the thread cutter at the temple cuts the yarn. There is no possible way for the yarn to be woven into the cloth. *Stephen Vernarec, Wallington, N. J.*

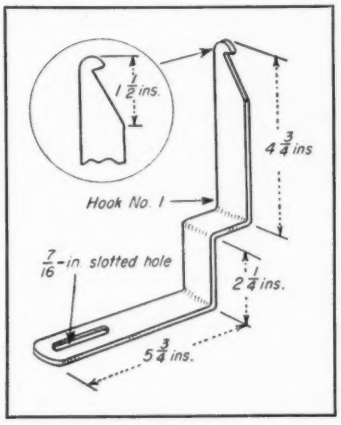


Fig. 1

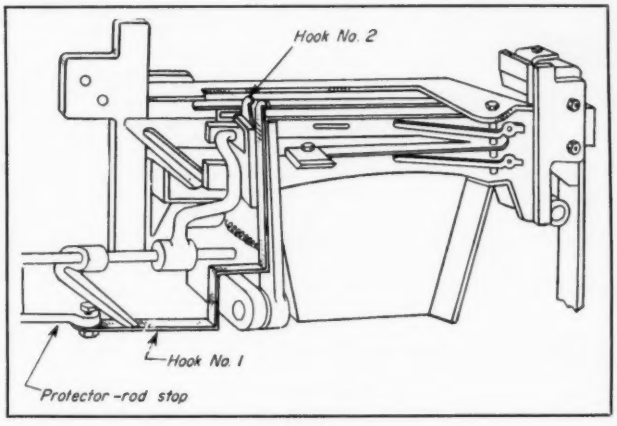


Fig. 2

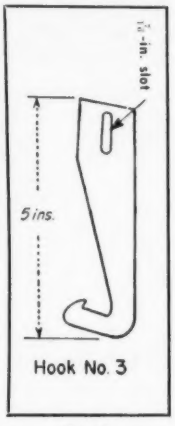


Fig. 3

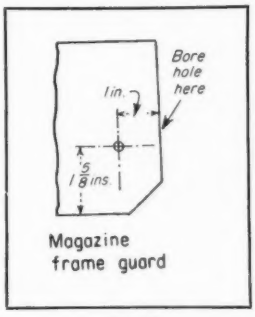


Fig. 4

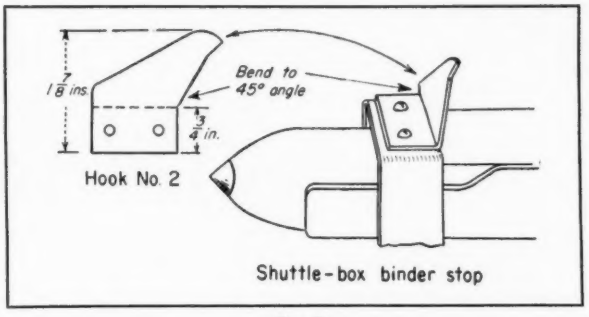


Fig. 5

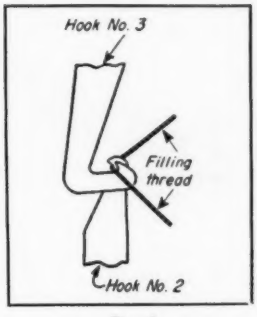


Fig. 6

How To Clean Greasy Belts

The cleaning of greasy flat leather and cotton belts requires only a solvent soaking and a wringing. Put the loosely coiled belt on its edge in a solvent bath of gasoline, naphtha, gasoline and turpentine, kerosene, benzol, carbon tetrachloride, ammonia, alcohol, or soda and water. After remaining submerged overnight, the belt will be free of grease and dirt. Dirt that does not settle out can be easily removed by brushing or scraping.

Speed the drying by running the belt through an ordinary wringer. If a wringer is not available, place the belt on a clean, flat surface and put a heavy roller on one end. Then pull the belt; this causes a squeezing action as the roller moves along the surface. Roll the belt up as it is pulled.

Don't clean rubber belts this way, because some of the solvents dissolve rubber. Be careful of explosion and fire when you use flammable solvents. *W. F. Schaphorst, Newark, N. J.*

Kinks and Short-Cuts

Shower-Curtain Hooks Hold Ends For Checking Warp Tension

SHOWER-CURTAIN HOOK holds the ticket to the correct number of ends for checking warp tension.

We check the tension on the warps of our looms running filament-fiber fabrics once each day to be sure the tension is always correct for the style of cloth being woven. Each style of cloth has to be held to a predetermined tension setting, and the setting is recorded on a checklist.

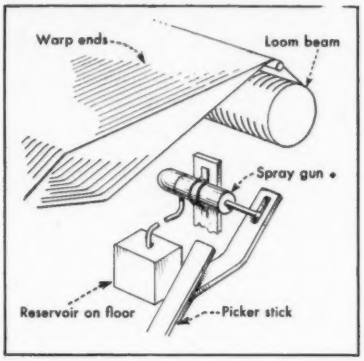
Smash hands check the warp tension by the checklist at the beginning of the first shift each day with a Crompton & Knowles tension meter. A certain number of ends are checked for each style of cloth woven.

We used to use braided-base twines fastened in the warps between the whiproll and the warp beam to separate the counted ends from the body of the warp. Now we use metal shower-curtain hooks in place of the twine. The hooks have been plated to prevent rust and cost less than 1¢ each.

When the assistant overseer of weaving checks in a new warp, he records the style of cloth, number of ends to be used to check the tension, and the grams of required tension on a small cardboard ticket. The ticket is made out in the weave-room office from a checklist. Then the ticket is hooked over the counted warp ends at the loom.

The hooks cannot break or get lost, and they stay in the warp until the warp runs out. *H. W. Sutherland, Greensboro, N. C.*

We Use a Spray Gun To Humidify Warps



SPRAY GUN is attached to a stand on the loomside. An arm bolted to the picker stick makes the gun spray water. The water comes from a reservoir on the floor.

The humidity in our weave room used to be so high that our employees were always uncomfortable. Even then, we did not have enough humidity to weave some of our styles of cloth at high production.

We now have a new method for putting humidity where we need it, and our over-all relative humidity is reduced.

A hand-type push spray gun commonly used to spray insecticide is fastened on a stand extending from the loomside. An arm is bolted to the picker stick and fastened to the handle of the spray gun.

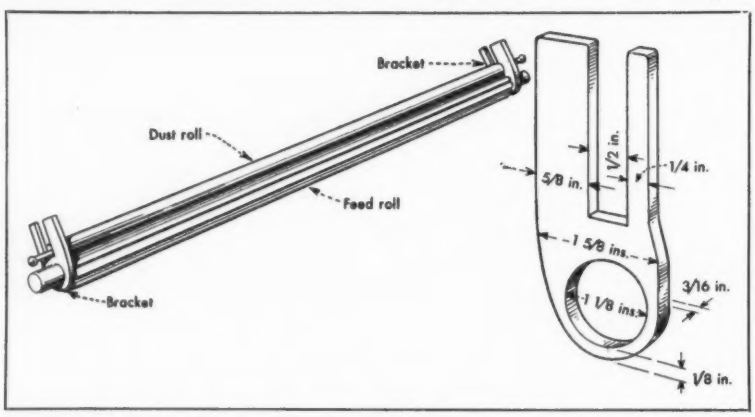
A small covered reservoir is set on the floor and has a piece of flexible tubing running from it to the spray gun. The reservoir is filled with water.

Each time the loom picks from the end where the spray gun is attached, the bottom of the warp at the back of the harnesses is sprayed with water. On warps that need a lot of humidity, we attach a spray gun to each end of the loom.

Now the humidity is right on the warp where it is needed most.

Since we have been using this new method of humidification, we have been able to reduce our over-all weave-room humidity greatly and our weave-room production is higher. *Minoru Uno, Japan*

Brackets on Card Feed Roll Keep Dust Roll Turning



BRACKETS fit onto each end of the feed roll, and the cut-down ends of the dust roll fit into the slots. The ¼-in. side of the bracket rests against the lickerin bonnet. Bracket details are given in the inset.

The dust rolls at our mill keep turning and don't fall onto the lap. How do we do it? With two little brackets that slip onto the feed-roll shaft.

Each bracket is made from ⅛-in. flat steel stock to the dimensions indicated in the sketch.

The ends of the dust roll are cut down to fit the slots in the brackets.

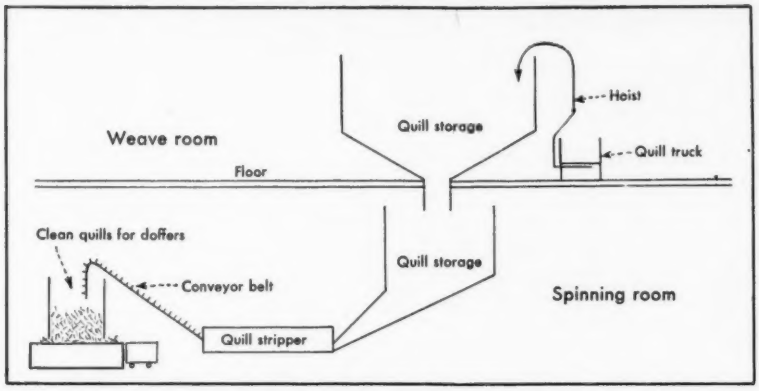
The dust rolls now can't slip off the flutes, and they turn constantly with the feed roll. The sets allow the dust roll to rise as waste builds up.

We are very much satisfied with the brackets because they solved a small but annoying problem in our card room. *W. K. Winebarger, Lenoir, N. C.*

Guard Rail Prevents Bale-Press Accidents

A guard rail on the floor at the bale-press pit prevents feet from slipping into the pit and getting squashed. Any slight disruption in flow of stock into the pit is more than compensated for by the added safety. *The Textorian.*

Streamlined Quill Stripping at Joanna Cotton Mills Co.



NEW HANDLING SYSTEM eliminates manual handling to a great extent. Quills to be stripped are emptied into a bin in the weave room, and they are fed by gravity to the quill bin at the quill-stripping machine. Clean quills are transported by an inclined conveyor belt to a box from which doffers fill their trucks.

A new system of handling quills from weaving back through quill stripping to spinning has increased efficiency 40% and eliminated a safety hazard at Joanna Cotton Mills Co., Joanna, S. C.

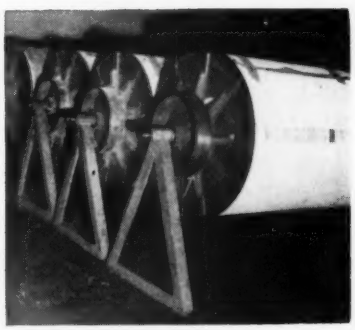
The old way was to haul boxes of quills that needed stripping in trucks from the weave room down to the spinning room. Many trucks were needed, and the elevator was tied up.

Trucks had to stay behind the quill-stripping machine until the operator could empty them into the hopper, and trucks had to be handled one at a time. When a truck was filled with clean quills, the operator had to move it away and hoist another truckload into his chute. This method was dangerous, laborious, and inefficient.

The new method has done away with all the unpleasant features of the situation. A large chute, big enough to hold all the quills from one shift's operation, was built into the floor of the weave room to extend down to just over the quill-skinning machine on the floor below in the spinning room. The quills are poured into this chute in the weave room and are fed by gravity to the skinner operator. This system does away entirely with the traffic involved in transporting the boxes of quills down the elevator to the spinning room. The weave room also has many more filling trucks because they are no longer tied up in the spinning room.

The skinner operator no longer has to get down from his machine to remove a box of quills when he has finished with it. The finished quills are now fed by a conveyor belt to a large "chicken-feed" type of hopper. From this hopper the doffer can now fill his doff box much more rapidly and easily. He now pulls quills into his box and doesn't lift them. *The Joanna Way.*

Use Angle-Iron Stands To Store Loom Beams



TRIANGLE STANDS hold stored loom beams in orderly rows.

We like to keep our weave room neat, but it is necessary to store spare slashed warps at one end of the weave room.

We tried several methods of storing the warps, but each method always had some disadvantages. The principle disadvantage was that loose warps often were pushed together and ends were broken.

Now we store the warps a new, safe, and easy way.

A long section of 2x¼-in. angle iron is gapped at two points and bent at the gaps to form an isosceles triangle. The corners are welded together, and a 3-in. section of pipe with its inside diameter ¼ in. larger than the diameter of the loom-beam journals is welded to the two ends where they are welded together.

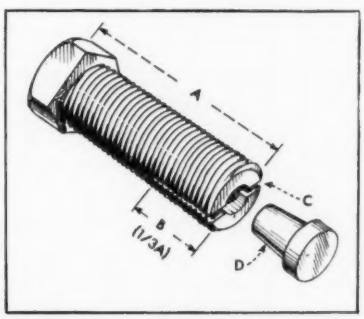
Several of these angle-iron stands are made.

Loom beams are brought from the slasher room to the weave room on trucks. A hoist lifts the beams from the trucks with a sling around the center of the warp. While the loom beams are suspended, the pipe of a triangle stand is slipped over each end of the beam journals; and then the hoist is lowered to let the beam down, and the hoist is removed.

With this arrangement, the loom beams are set about 14 ins. off the floor in orderly rows. They are high enough off the floor to be swept under easily so that the storage area is always clean.

When a warp beam is needed for a loom, it is lifted with the hoist and the triangles are slipped off. Then the hoist is used to transport the warp to the loom.

How To Make a Lock Bolt From an Ordinary Bolt



AN ORDINARY BOLT may be expanded at its base by a tapered plug to form a lock bolt.

The bottom of an ordinary bolt may be expanded to create a lock bolt.

Referring to the illustration, drill a small hole *C* in the base of the bolt and make a hacksaw cut the length of *B*. When tapered plug *D* is inserted into *C* and driven home, the base of the bolt expands at the hacksaw cut and the threads at the base are bound tightly together. This bolt is now permanently secured. *W. E. Warner, Essex, England*

Lapmeter Record Eliminated by a Frequency Chart

Here's how we get the coefficient of variation of our picker laps almost as soon as the last yard has been weighed.

The equipment: an adding machine, Saco-Lowell lapmeter, an ounces-per-yard table, and a frequency chart.

The ounces-per-yard table, as shown in the illustration, helps us to get actual ounces per yard from the lapmeter reading.

The frequency chart gives us the data we need to make the calculation for coefficient of variation. The chart is plotted as the test is being run. There's no need to go back over a graph as you have to when you use the lapmeter record form.

The adding machine is set up at the right side of the lapmeter, and the weight of each yard is punched in (to the nearest hundredth of an ounce) as each yard is weighed. (We get the weight of each yard from our ounces-per-yard table.) When the last lap has been weighed, the total lap weight is indicated on the adding machine.

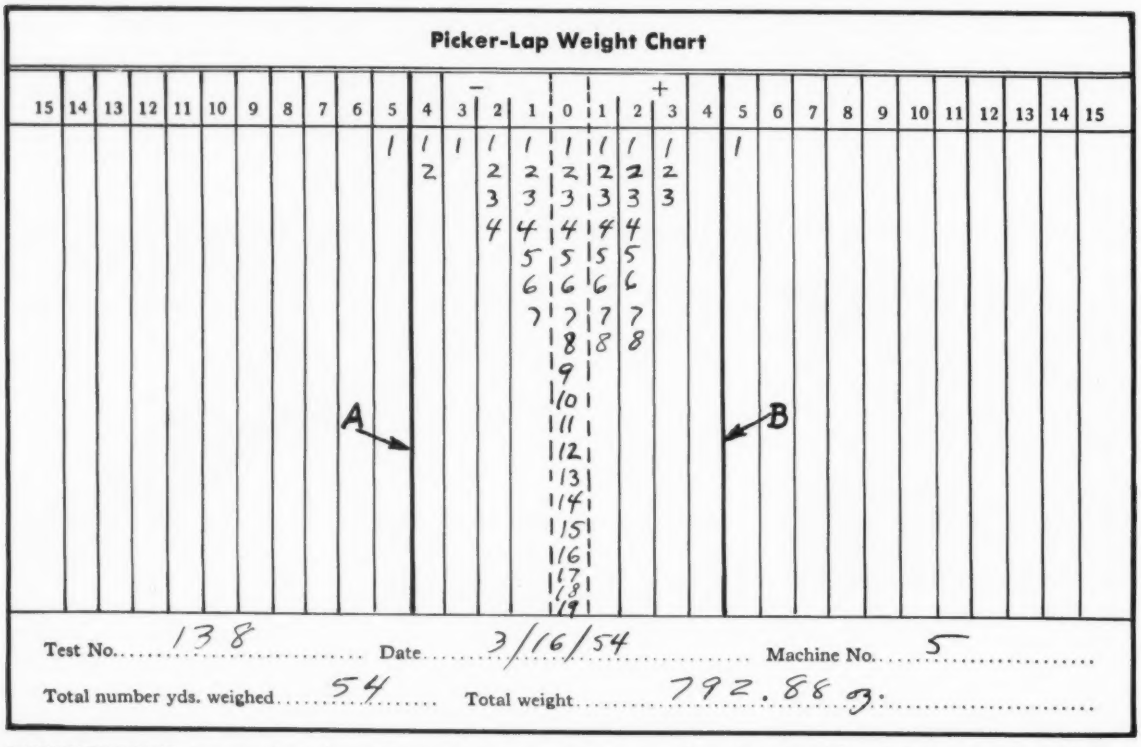
As soon as the correct figure has been punched on the adding machine, we mark the proper column on the frequency chart.

For example, if a yard weighs 0.3 oz. heavy we look on the ounces-per-yard table and find that actual weight is 14.97 oz. (Our standard is 14.67 oz.) We punch 14.97 on the adding machine and put a numeral in the column headed "Plus 3" on the frequency chart. Entries on the frequency chart are cumulative; so only the last number need be read at calculation time. Heavy lines on the frequency chart indicate the limits. Limit lines are indicated on chart below as A and B.

In the example, 52 yds. (96.3% were within limits. Average weight was 14.68 oz. vs. 14.67 standard. The first and last yards were not weighed. Coefficient of variation was 0.899.

	− 0 +	
14.67		14.67
14.57	0.1	14.77
14.47	0.2	14.87
14.37	0.3	14 97
14.27	0.4	15.07
14.17	0.5	15.17
14.07	0.6	15.27
13.97	0.7	15.37
13.87	0.8	15.47
13.77	0.9	15.57
13.67	1.0	15.67
13.57	1.1	15.77
13.47	1.2	15.87
13.37	1.3	15.97
13.27	1.4	16.07
13.17	1.5	16.17
13.07	1.6	16.27
12.97	1.7	16.37
12.87	1.8	16.47
12.77	1.9	16.57
12.67	2.0	16.67
12.57	2.1	16.77

OUNCE-PER-YARD TABLE is based on the standard (14.67 oz. per yd. in this case) and allows actual weights to be quickly derived from lapmeter readings.


Picker-Lap Weight Chart
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A
B
Test No. 138
Date 3/16/54
Machine No. 5
Total number yds. weighed 54
Total weight 792.88 g.

FREQUENCY CHART gives at a glance the number of yards in each weight category. Heavy lines *A* and *B* mark limits; so yards outside limits are quickly spotted.

Regular Truck Checks Improve Efficiency

We installed a system of checking trucks in our mill that has resulted in increased efficiency throughout the mill. Here's how the system works:

We painted numbers on all our trucks and fitted a tag plate to each truck. The tag on each truck shows the department that uses the truck, the date of inspection, and who inspected it.

The maintenance engineer is responsible for the trucks, and he assigns a person from each department to oil and service the trucks. The engineer keeps a master schedule of all trucks and checks the trucks monthly with the schedule. *Dan Singer, Newton, Mass.*

News about

B. F. Goodrich Chemical *raw materials*

upgrade denim with Hycar latex

a simple, low cost method

THERE'S new life *and* sales appeal in denim that is upgraded with Hycar latex. Because of its improved wearing qualities and washfastness, Hycar treated denim can be used for sportswear and other garments where conventional denim is not practical. Hycar latex is easily applied as a warp size to cotton yarn or as an aftertreatment to the finished fabric. Hycar nitrile latex offers these advantages:

Ease of application. Prepared and applied at room temperature using conventional slashing or padding equipment.

High loom efficiency. Properly Hycar-sized yarns weave as well as yarns with high quality starch sizes.

Permanence. Hycar size lasts through extensive launderings—does not interfere with the Sanforizing processes.

Desirable hand. The finished denim has a pleasing soft, yet full hand unaffected by many washings.

Improved washfastness. In Launderometer tests, Hycar-sized blue denim showed no apparent fading or staining.

Increased wear life. Comparison after five launderings shows that Hycar-sized denim has an abrasion resistance 3 to 5 times that of regular starch sized denim.

Find out how Hycar nitrile latices can help you produce improved denim and other cotton products. For information, please write Dept. HZ-5, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Hycar Reg. U.S. Pat. Off. *Latex*

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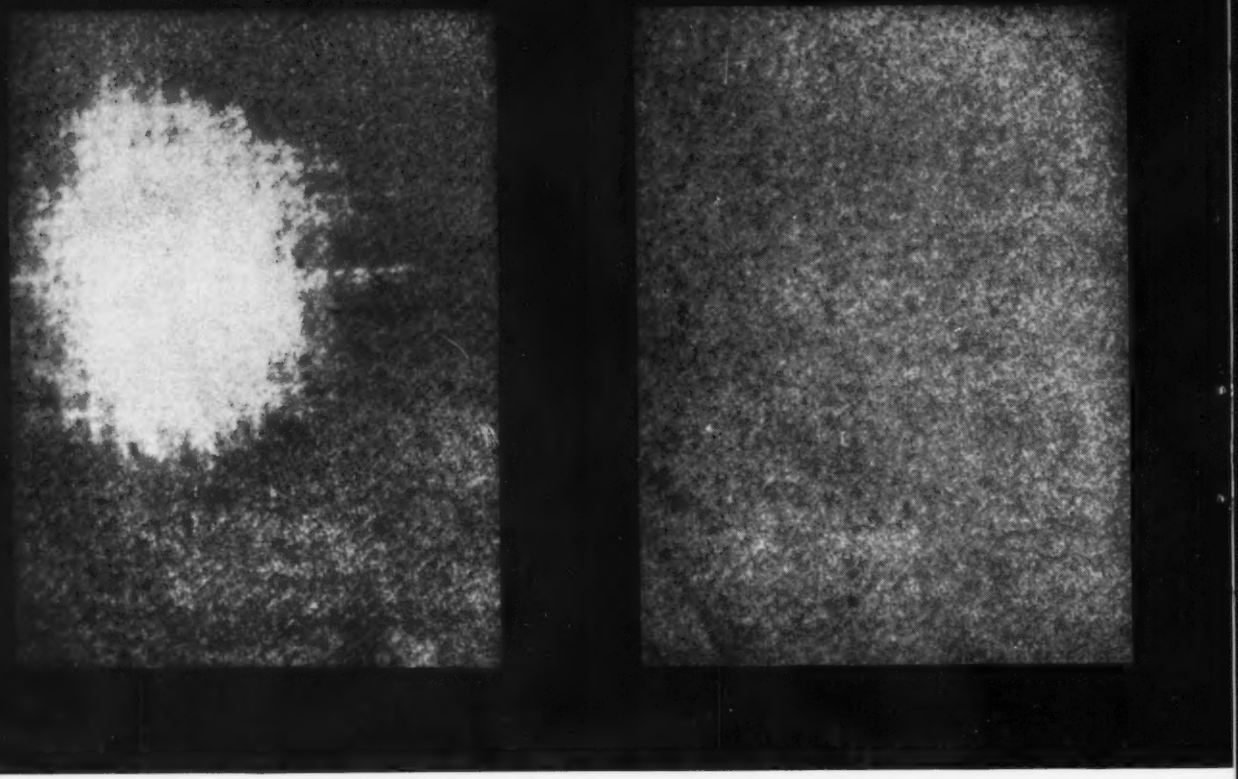

ORDINARY MACHINE OIL. Ultraviolet light proves that ordinary machine oil is hard to scour. Oil that remains in the textile prevents level dyeing.

SUNOTEX MACHINE OIL. Ultraviolet light proves scourability of Sunotex. This oil scours easily and completely, leaves no stain, permits level dyeing.

ULTRAVIOLET LIGHT PROVES SCOURABILITY OF SUNOTEX MACHINE OIL

These swatches were oil spotted: one with ordinary machine oil, the other with Sunotex. After scouring, they both *looked* clean. To make sure, both swatches were photographed under ultraviolet light. The swatch spotted with ordinary machine oil fluoresced brightly, showing that even though it looked clean, it was still badly spotted. The swatch spotted with Sunotex didn't fluoresce, proving it to be oil-free after scouring.

Here's proof of how Sunotex helps prevent spoiled goods and unlevel dyeing. It scours easily, leaves no stain, does not damage fabrics.

For more information, call your nearest Sun office or write SUN OIL COMPANY, Phila. 3, Pa., Dept. TW-9,

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CALCO dyelines

Advertisement
No. 39 of a series

Calco

An Old Standby is Still Going Strong

Calcocid* Scarlet MOON was discovered in 1882 and is a Cyanamid product of long-established value for dyeing many types of textiles. Even the new acid scarlets have not replaced this dye because

the latter combines excellent working properties, solubility and money value unequalled by the newer dyes.

This dye is made from Aminoazobenzene and G-salt, both of which are made by American Cyanamid. This assures dyes of the highest quality since Cyanamid controls the entire process, from the manufacture of the intermediates through to the finished dyes.

Recommended applications include the following:

WOOL—Calcocid Scarlet MOON can be used in all conventional dyeing equipment to produce full, rich scarlet shades with good fastness to light. Wool dyeings exhibit good fastness to light, moderate fastness to a mild washing and fulling, and good to excellent fastness to alkalis, decating and hot pressing.

Calcocid Scarlet MOON exhausts well from a slightly acid dye bath, producing brilliant, level shades. This dye can also be applied from a neutral Glauber's Salt or common salt dye bath, yielding shades with good color value. Cotton and rayon are slightly tinted and could be used for white effects in wool pieces.

Fastness to light on wool ranges from 4-5 to 5-6 for light to heavy shades respectively. Calcocid Scarlet MOON is used for the production of bright scarlets for skirts, dress goods and coats.

NYLON—Calcocid Scarlet MOON can be applied to nylon by using ammonium chloride as the exhausting agent. Good exhaustion is obtained, and such dyeings have excellent fastness to light and are bright in shade.

Calcocid Scarlet MOON is used for producing fast-to-light scarlets on filament nylon, and when after-treated with tannic acid or fixing salts, the dyeing is also fast to washing.

SILK—Calcocid Scarlet MOON dyes silk from a broken soap bath or from a slightly acid dye bath. Bright, full shades of scarlet are obtained.

VICARA—Calcocid Scarlet MOON can be applied to Vicara by nylon or wool methods and produces dyeings with good fastness to AATCC Wash Test #2, and moderate fastness to light. It does not stain effect fibers during washing.

HYDROPHOBIC FIBERS—Calcocid Scarlet MOON will also give good color value and bright shades when applied to hydrophobic fibers by the cuprous ion technique.

RESIN TREATMENTS—Nylon and wool dyeings of Calcocid Scarlet MOON can be resin-treated with Aerotex* Cream 450 or Aerotex Cream M-3 to impart dimensional stability to Nylon. They can also be treated by the Lanaset® process for shrinkproofing of wool without serious shade changes.

A Dependable Stilbene Yellow

Calcomine* Yellow 2G is a Cyanamid product of proved worth, and an old standby for the textile industry. Its popularity for textile uses is due to certain specific properties not found in direct yellows of other chemical classes. Like all Stilbene colors it is very soluble, exhausts slowly, and has very good fastness to washing. Its exhaust is salt-controllable and only small amounts are required to obtain good color value. In dyeing blends of viscose and cotton, the two fibers are dyed practically the same depth of shade. It is a valuable speck dyeing color since, at lowered temperatures, it leaves acid color-dyed wool practically unstained. It also leaves acetate fiber unstained.

Quick Tips

Quick Check for Even Squeeze on mangles and padders: insert a piece of soft carbon paper between two pieces of white paper. Cut into three strips. Place one at each end of nip and one in center. Any variation in the width of the carbon impression from one position to the other indicates a difference in squeeze, the wider the carbon impression the greater the squeeze.

If More Than One Salt Rinse is given after naphtholating yarn on packages or beams, or piece goods on jigs, add 7 oz. of caustic soda per 100 gals. of water to prevent hydrolysis. It results in better color value.

For the Textile Bookshelf

The Application of Dyes to Textile Fibers at High Temperatures (Calco Technical Bulletin No. 833). A review of basic studies of the dyeing of textile materials at elevated temperatures, begun in 1941 by Calco in cooperation with the Bachmann Uxbridge Worsted Corporation.

Effect of Resin Treatments on Viscose and Cotton Dyed With Selected Calcomine and Calcodur* Resin Fast Dyes* (Dyestuff Technical Bulletin No. 835). This bulletin describes the working properties and gives the detailed fastness properties of selected Calco® dyes which are particularly useful in fabrics that are to be after-treated with melamine-formaldehyde or the urea-formaldehyde resins.

*Trade-mark

The Credit Union at Cyanamid's Bound Brook plant has extended 14,719 loans to employees, totaling $2,400,226.

EIGHTEENTH

SOUTHERN TEXTILE EXPOSITION

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Monday through Friday

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EQUIPMENT
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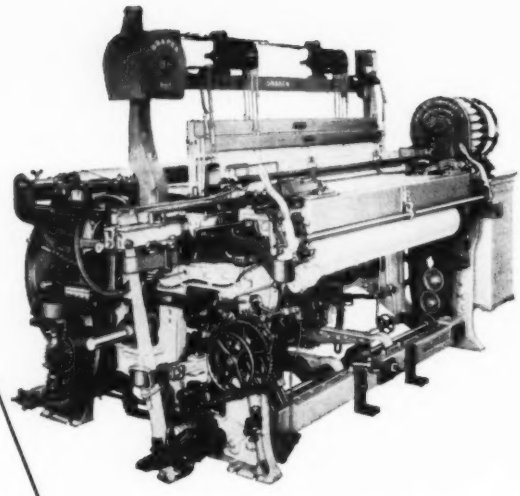
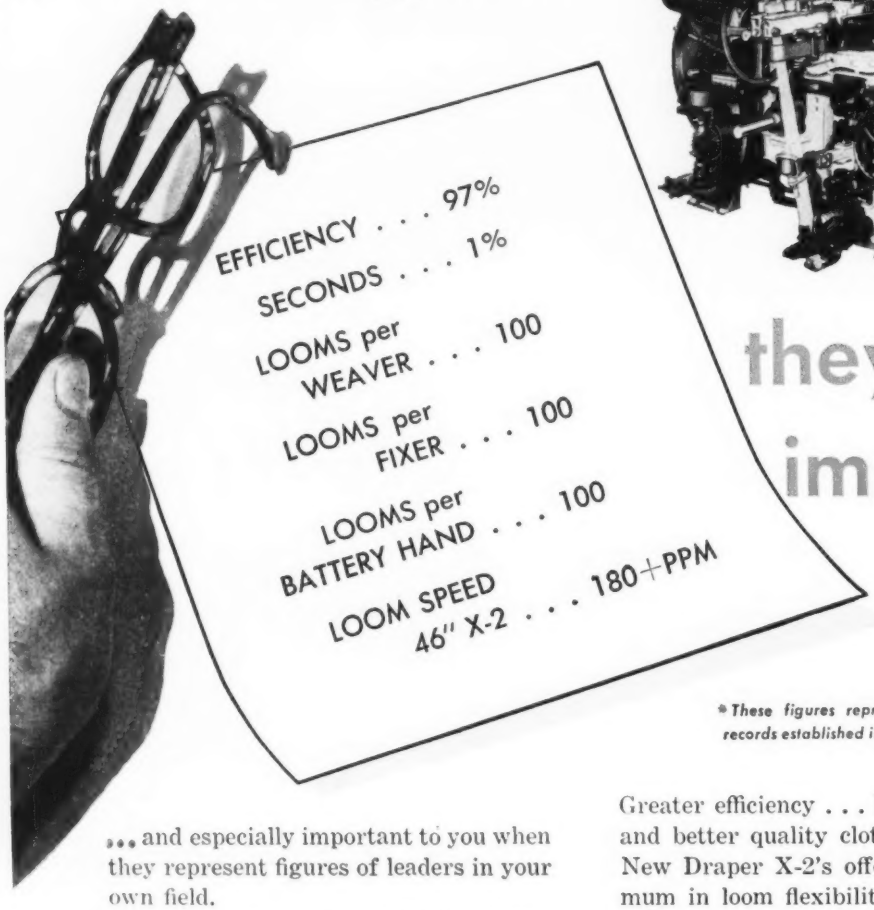
Textile Hall **Greenville, S. C.**

October 4 through 8, 1954

9 a.m. to 6 p.m.

Take a look at these figures*





they are important!

*These figures represent the average production records established in several Draper equipped mills.

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New Draper X-2 looms increase production as much as 20% over old looms.

Greater efficiency . . . less maintenance and better quality cloth at less cost. New Draper X-2's offer you the maximum in loom flexibility and versatility . . . vital assets to the successful operation of your mill.

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18th Southern Textile Exposition

Visitors to the 18th Southern Textile Exposition in Greenville, S. C., October 4 to 8, will find a larger exposition than the last show in 1952.

A new annex that contains 14,000 sq. ft. of floor space has made it possible to include exhibitors who could not be accommodated in previous years.

Over 300 companies that have contracted for space will show new developments in textile machinery, supplies, primary and fabricating materials, and accessories.

The show will open on Monday, October 4, at 9 a. m. and will be open each day from 9 a. m. until 6 p. m.

TEXTILE WORLD, which will be located in booth 222G, extends a cordial invitation to all visitors to the show to stop by and see us. Copies of our show directory and literature file folders will be available for your use.

TEXTILE WORLD representatives at the show during the week will include E. D. Fowle, publisher; P. M. Thomas, editor-in-chief; D. H. White, manager; and J. H. Kennedy, R. B. Pressley, M. London, R. W. Pinault, T. B. Winston, J. H. Blore, W. B. Dall, J. Ryan, W. G. Ashmore, M. C. MacKenzie, J. G. Sabella, H. C. Harvey, R. L. Chisholm, J. C. White, Jr., and A. W. Fisher.

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*For advertisements of other exhibitors, see the regular *Index to Advertisers* starting on page 333 of this issue.

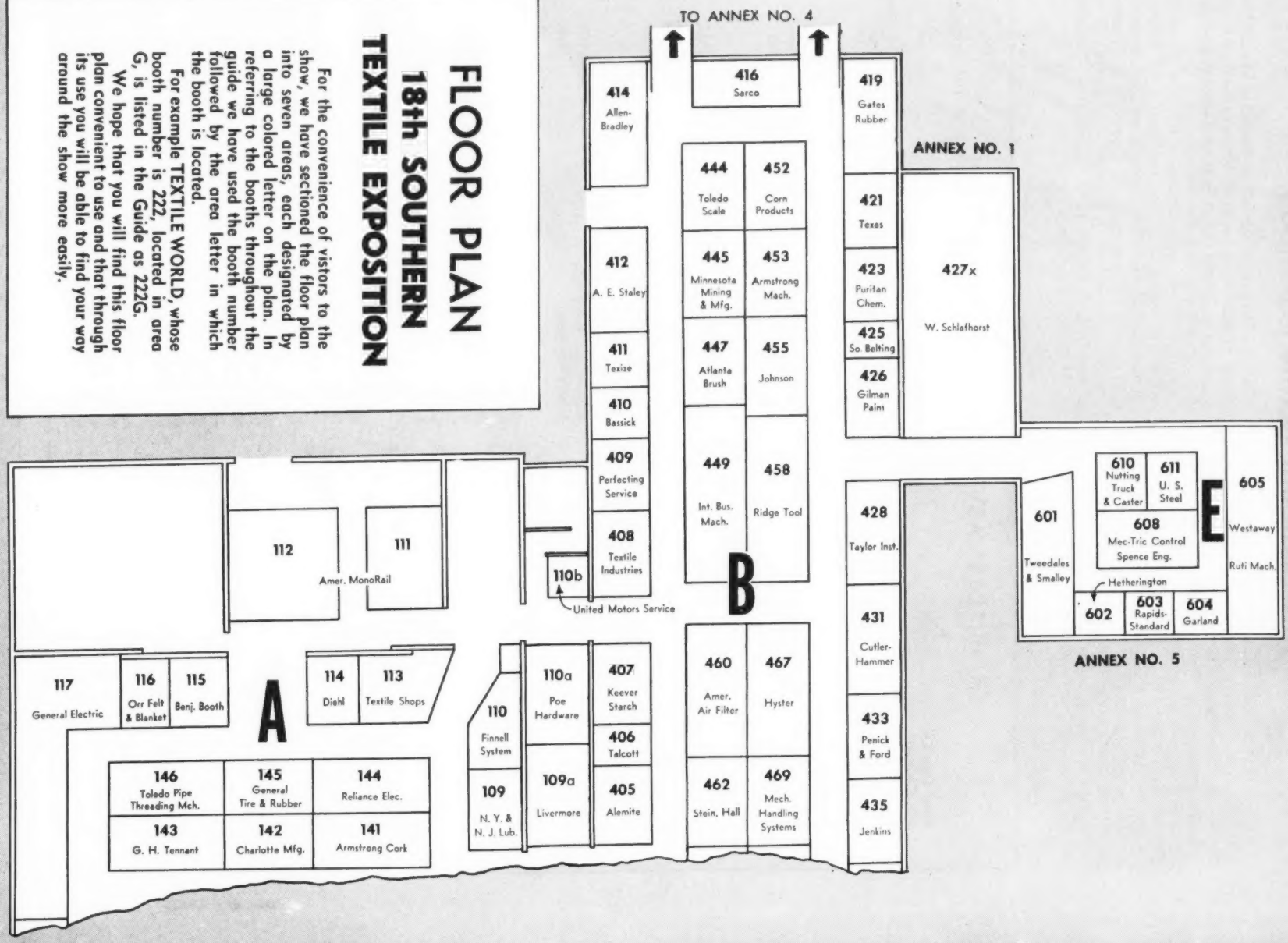
FLOOR PLAN

18th SOUTHERN TEXTILE EXPOSITION

For the convenience of vistors to the show, we have sectioned the floor plan into seven areas, each designated by a large colored letter on the plan. In referring to the booths throughout the guide we have used the booth number followed by the area letter in which the booth is located.

For example TEXTILE WORLD, whose booth number is 222, located in area G, is listed in the Guide as 222G.

We hope that you will find this floor plan convenient to use and that through its use you will be able to find your way around the show more easily.



120 Textile Age
121a Bijur Lub.
121b U. S. Tex. Mach.
122 Modern Textiles
123 Ashworth
125 Roberts
126 Will-Mat
127 Carolina Plating & Stamping
127a Container Corp. of Amer.
140 Bahan Textile Mach.
138 Robert Reiner
137 Steel Heddle
136 Precision Gear & Mach.
135 Dayton Rubber
132 Draper
129 Hunt Loom
A
128 Watson-Williams
101 Allen Beam
102 Amer. Rieter
STAIRS
LOBBY
ENTRANCE
FIRST FLOOR
WEST WASHINGTON STREET
STAIRS
Clark-Cutler-McDermott
102a
108 Amer. Paper Tube
107 Veeder-Root
106 Continental Diamond Fibre
108a Dodenhoff
106a Hartford Mach. Screw
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404 Westinghouse
403 Anheuser, Busch
402 Keystone Lub.
401 Scott Testers
B
464 Westinghouse
471 Wrenn Bros.
472 Colson
473 Fibre Specialty
443 Bullard Clark
442 Paddock
437 Allis Chalmers
439 Nat. Starch
441 Fuller Brush
441x Adams
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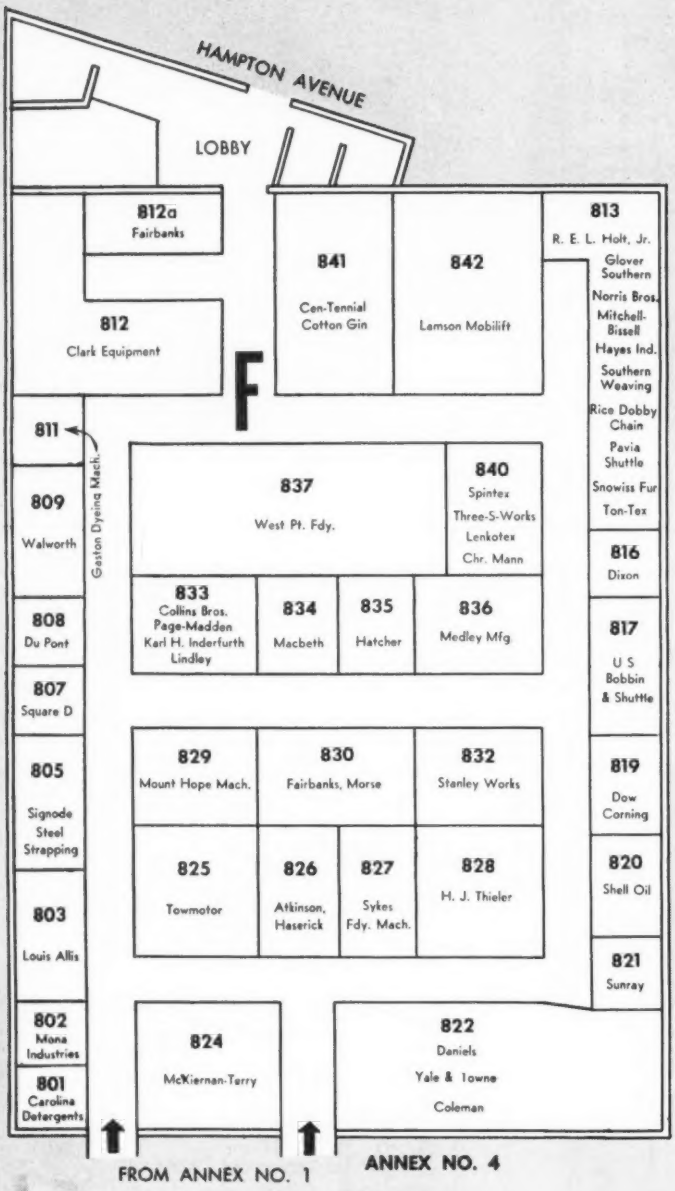
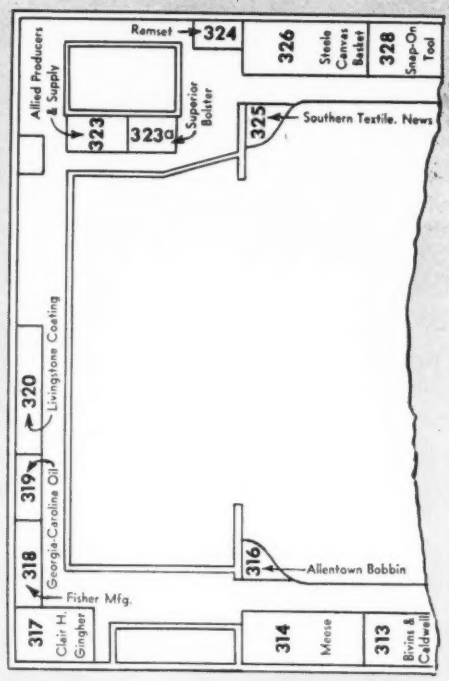
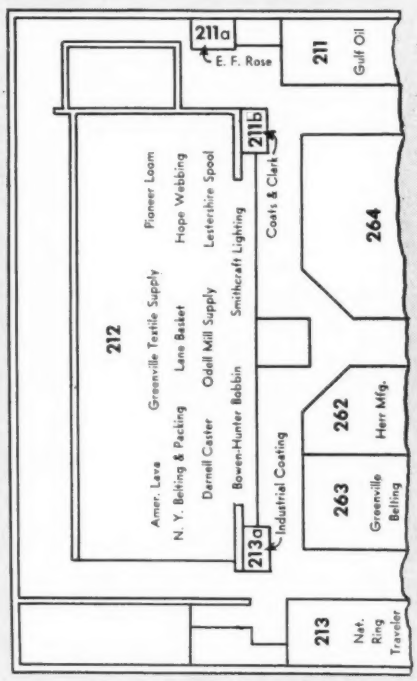
105 Ragan Ring
104 Hyatt Bearings
103 Sinclair Refining
517 Southern Loom
515 Acme Steel
C
514 Pure Oil
513 Faultless Caster
512 Chemstrand
511 SKF Ind.
507 Graton & Knight
509 Morton Salt
510 Lincoln Engineering
506 Gower Mfg.
505 Carolina Bearings
504 Manton-Gaulin
503 Edda Int.
501 Hubinger Co. Bachmann Uxbridge Colby Coop. Starch Atlantic Gelatin Ira L. Griffin
502 Parks-Cramer
ANNEX NO. 2
710 Stellite American
701 Abbott Mach.
708 Unistrut Prod.
709 Jas. Hunter
707 Weston Elec. Inst.
706 Clark Controller
D
705 Alvey Conveyor
704 Louden Mach.
702 Wiegand
703 Ralph Gossett
ANNEX NO. 3



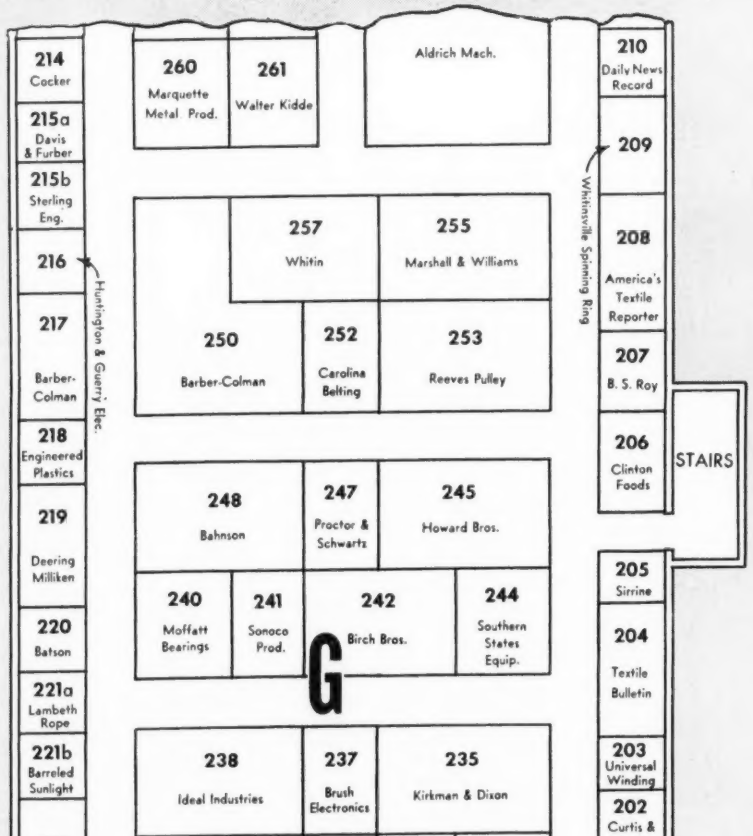




FLOOR PLAN

(continued)

18th SOUTHERN TEXTILE EXPOSITION


214 Cocker
215a Davis & Furber
215b Sterling Eng.
216
217 Barber-Colman
218 Engineered Plastics
219 Deering Milliken
220 Batson
221a Lambeth Rope
221b Barreled Sunlight
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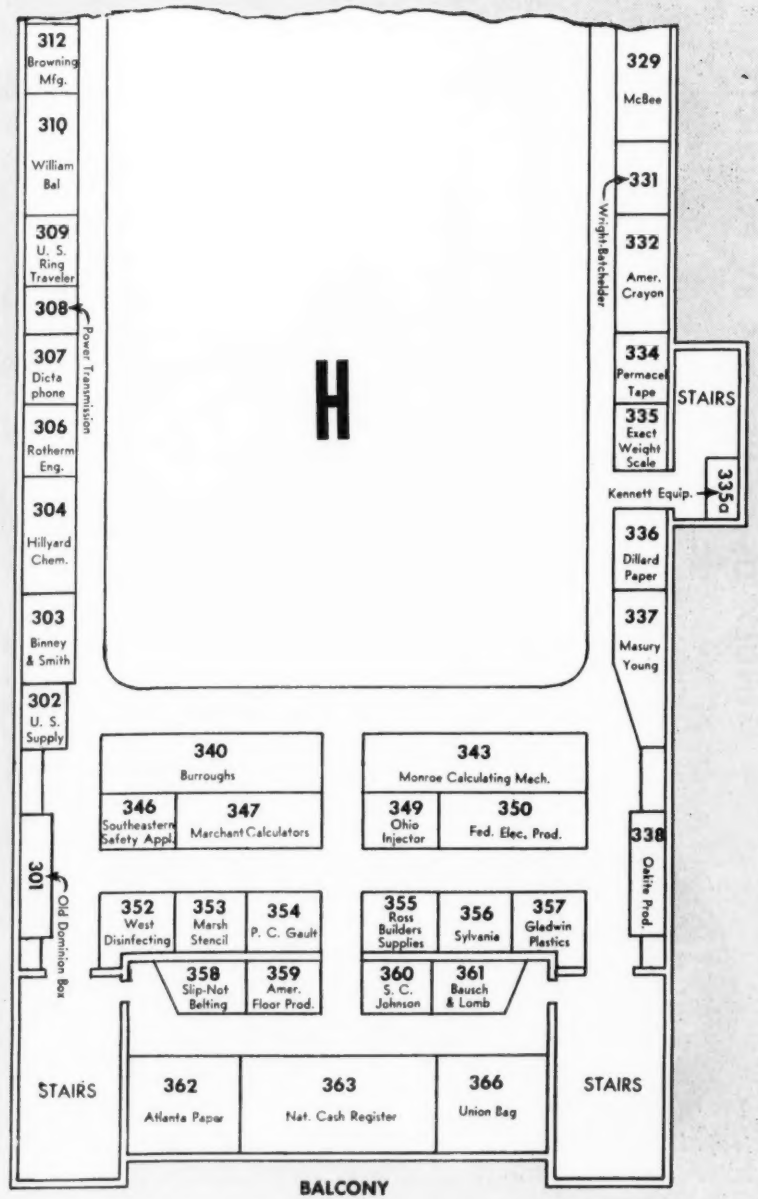
260 Marquette Metal Prod.
261 Walter Kidde
Aldrich Mach.
257 Whitin
255 Marshall & Williams
250 Barber-Colman
252 Carolina Belting
253 Reeves Pulley
248 Bahnson
247 Proctor & Schwartz
245 Howard Bros.
240 Moffatt Bearings
241 Sonoco Prod.
242 Birch Bros.
244 Southern States Equip.
G
238 Ideal Industries
237 Brush Electronics
235 Kirkman & Dixon
230 Hollister-Moreland
231 Dobeckmun
232 Parks & Woolson
233 Amer. Pulley
234 Seydel-Wooley
224 Victor Ring Traveler
224a Excel Textile Supply
225 Selig Co.
226 Gossett-Meson Gossett Mach.
229 Sheffield
229a Caroline Supply
Int. Correspondence Schools
227 R. H. Hood James Smith
227a
228 T. B. Wood
STAIRS
STAIRS
STAIRS
210 Daily News Record
Whitinsville Spinning Ring
209
208 America's Textile Reporter
207 B. S. Roy
206 Clinton Foods
205 Sirrine
204 Textile Bulletin
203 Universal Winding
202 Curtis & Marble
201 Pittsburgh Corning
SECOND FLOOR


312 Browning Mfg.
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307 Dicta phone
306 Rotherm Eng.
304 Hillyard Chem.
303 Binney & Smith
302 U. S. Supply
301
Old Dominion Box
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329 McBee
331
Wright-Batchelder
332 Amer. Crayon
334 Permacel Tape
335 Exact Weight Scale
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336 Dillard Paper
337 Masury Young
338 Oakite Prod.
340 Burroughs
346 Southeastern Safety Appl.
347 Marchant Calculators
343 Monroe Calculating Mach.
349 Ohio Injector
350 Fed. Elec. Prod.
352 West Disinfecting
353 Marsh Stencil
354 P. C. Gault
358 Slip-Not Belting
359 Amer. Floor Prod.
355 Ross Builders Supplies
356 Sylvania
357 Gladwin Plastics
360 S. C. Johnson
361 Bausch & Lamb
STAIRS
362 Atlanta Paper
363 Nat. Cash Register
366 Union Bag
STAIRS
BALCONY

Mount Hope SYSTEM

Ted Ryder,
Plant Engineer, says:

"The Apponaug Co. saves time, increases quality and quantity with Mt. Hope equipment!"

You soon learn the value of Mount Hope equipment when you co-ordinate it to

TRAP LOST PROFITS in your FINISHING

The Mount Hope System benefits your plant immediately through increased production, improved quality, reduced seconds. We'll be glad to prove this statement with facts and figures based on your own practical operation.

Read how this company profits!

MOUNT HOPE MACHINERY COMPANY

15 FIFTH STREET, TAUNTON, MASS.

INDEX OF EXHIBITORS BY PRODUCTS

EXHIBITOR	PRODUCT	BOOTH NO.
1. Air Conditioning, Air Cleaning, Humidity		
American Air Filter Co., Inc.	Air filters	460B
Bahnson Co.	Air conditioning	248G
Parks-Cramer Co.	Air conditioning	502C
2. Building Construction and Maintenance, Paints, Tools, Yard Equipment, Water Supply		
American Floor Products Co.	Floor mats	359H
Barreled Sunlight Paint Co.	Paints and finishes	221bG
E. I. du Pont de Nemours & Co., Inc.	Paint	808F
Finnell System, Inc.	Floor-maintenance machines	110A
Gilman Paint & Varnish Co.	Maintenance supplies	426B
S. C. Johnson & Son, Inc.	Floor-maintenance equipment	360H
Olney Paint Co.	Paints and brushes	426B
Pittsburgh Corning Corp.	Glass blocks and Foamglas insulation	201G
Ramset Fasteners, Inc.	Tools and fasteners	324H
Ridge Tool Co.	Pipe tools	458B
Ross Builders Supplies, Inc.	Building supplies	355H
Snap-On-Tools Corp.	Maintenance tools	328H
Toledo Pipe Threading Machine Co.	Pipe tools and power machines	146A
United States Steel Corp., American Steel & Wire Div.	Fence	611E
3. Chemicals, Dyestuffs, Fiber, and Yarns		
Chemstrand Corp.	Fibers	512C
Coats & Clark, Inc.	Yarns	211bG
Dobeckmun Co.	Metallic yarns	231G
Dow Corning Corp.	Silicone products	819F
Penick & Ford Ltd.	Gums and finishing gums	433B
Stein, Hall & Co., Inc.	Printing and finishing chemicals	462B
4. Cleaning Equipment and Supplies, Fire-Protection Equipment		
Allied Producers & Supply Co., Inc.	Cleaning supplies	323H
American MonoRail Co.	Cleaning equipment	11A
Bahnson Co.	Traveling cleaners	248G
Carolina Detergents, Inc.	Detergents	801F
Fuller Brush Co., Industrial Div.	Sweeping equipment	441B
Hillyard Chemical Co.	Cleaning equipment	304H
Louden Machinery Co.	Traveling cleaners	704D
Masury-Young Co.	Cleaning compounds	337H
Oakite Products, Inc.	Cleaning equipment	339H
Parks-Cramer Co.	Traveling cleaners	502C
Puritan Chemical Co.	Cleaning supplies	432B
Selig Co.	Cleaning supplies	226G
Southeastern Safety Appliance Co.	Safety appliances	346H
G. H. Tennant Co.	Cleaning equipment	143A
West Disinfecting Co.	Cleaning supplies	352H
5. Dyeing, Finishing, and Cloth-Room Equipment and Supplies		
American Safety Table Co.	Tables	230G
Ashworth Bros., Inc.	Napper machinery	123A
Birch Bros., Inc.	Dyeing and cloth-room equipment	242G
Curtis & Marble Machine Co.	Cloth-room equipment	202G
Dinsmore Mfg. Co.	Sewing machines	230G
Gaston County Dyeing Machine Co.	Dyeing and drying equipment	811F
Clair H. Gingher & Son	Inspecting equipment	317H
James Hunter Machine Co.	Dyeing and finishing equipment	709D
Lindly & Co.	Automatic inspection machine	833F
Marshall & Williams Corp.	Tenter and guiding equipment	255G
McKiernan-Terry Corp.	Dyeing and finishing equipment	824F
Merrow Machine Co.	Sewing machines	230G
Morton Salt Co.	Brine makers	508C
Mount Hope Machinery Co.	Cloth-room equipment	829F
Parks & Woolson Machine Co.	Finishing machinery	232G
Sykes Foundry & Machine Co.	Guiding and inspecting equipment	827A
The Textile Shops	Stainless-steel and Teflon-coated equipment	113A
United States Supply Co.	Finishing equipment	302H
6. Electrical Equipment—Motors, Controls, Lighting, Etc.		
Allen-Bradley Co.	Controls	414B
Louis Allis Co.	Motors	803F
Clark Controller Co.	Controls	706D
Cutler-Hammer, Inc.	Controls	431B
Electro Dynamic Div., General Dynamics Corp.	Motors	110aB
Federal Pacific Electric Co.	Controls	350A
General Electric Co.	Controls	117A
General Electric Co., Lamp Div.	Lighting	117A
Hatcher Sales Co.	Door operators	835F
Huntington & Guerry Electric Co.	Electrical wiring	216G
Reliance Electric & Engineering Co.	Motors, drives, regulators	144A
Square D Co.	Controls	807F
Sylvania Electric Products, Co.	Lighting	356H
Westinghouse Electric Corp.	Motors, controls, lighting	464B
Westinghouse Electric Corp., Lamp Div.	Lamps	404C
Edwin L. Wiegand Co.	Radiant heaters	702D
7. Fluid Handling—Compressors, Pumps, Piping, Valves, Fittings, Unions, Joints		
Armstrong Machine Works	Traps	453B
Fairbanks Co.	Unions and valves	812aF
Fairbanks, Morse & Co.	Pumps	830F
Jenkins Bros.	Valves	435B
Johnson Corp.	Joints and valves	455B
Mec-Tric Control Co.	Valves, traps, gages	608E
Ohio Injector Co.	Valves	349H
Perfecting Service Co.	Rotary unions	409B
Rotherm Engineering Co., Inc.	Joints	308H
Sarco Co., Inc.	Traps	416B
Spence Engineering Co.	Valves and governors	608E
Walworth Co.	Valves	809F

CONTINUED ON PAGE 152

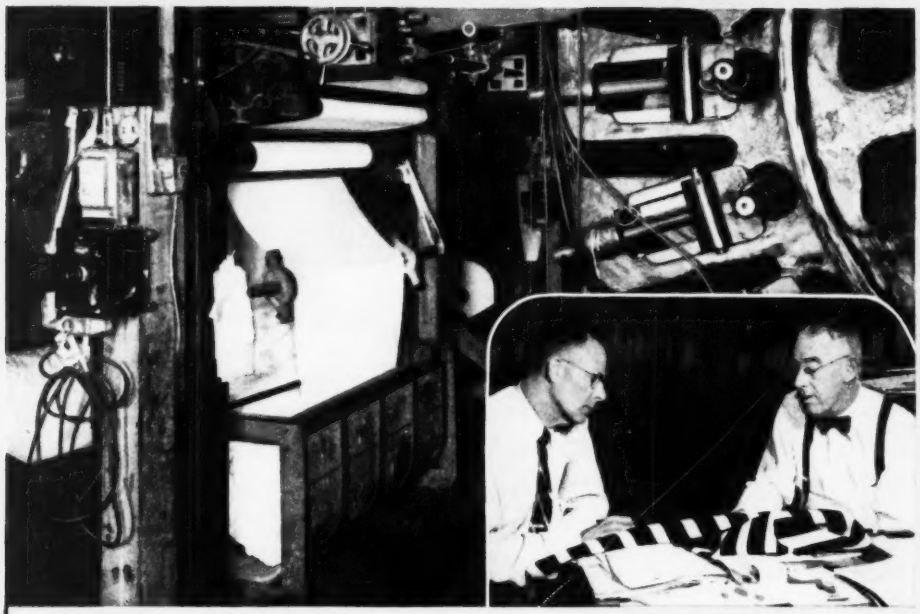
Mount Hope SYSTEM

Frederick G. Brown, President

The Apponaug Company

Apponaug, R. I. says:

"Mount Hope devices are among the best equipment we ever installed at Apponaug"



The original Mount Hope Continuous Roll Feed suggested by Ted Ryder.

Edward B. Ryder, Jr.
Plant Engineer

Frederick G. Brown
President

"A real money-maker!" The first Mount Hope Continuous Roll Feed ever sold has been in operation since 1945. Note Precision Guiders with lateral adjustment in front of every printing machine. Mount Hope equipment is used to ensure the Apponaug Company's famous quality operation all through the plant. Besides the Continuous Roll Feeds, Apponaug uses Mount Hope Bowed & Skewed Weft Straighteners, Expanders, Open Width Tension Devices, Vari-Bow Expanders, etc. Installed throughout a plant, Mount Hope devices attach to your present machines — amortize their cost within months, "trapping lost profits" for you in every process.

See for yourself! *Watch our running demonstration, meet us at Booth 829, Southern Textile Exposition, Greenville, S. C. October 4th through 8th — right next to booth of Slaughter Machinery Co., our Southern representative. Or have a Mount Hope Engineer survey your plant without obligation, show you how to "trap lost profits"!*

MOUNT HOPE
MACHINERY COMPANY

15 FIFTH STREET, TAUNTON, MASS.

For more information, write direct or use Reader Service post card.

INDEX OF EXHIBITORS BY PRODUCTS (*continued*)

EXHIBITOR	PRODUCT	BOOTH NO
8. Instruments—Measuring, Metering, Weighing Apparatus		
Bausch & Lomb Optical Co., Southeastern Div.	Optical instruments	361H
Brush Electronics Co.	Yarn-evaluation instruments	237G
Exact Weight Scale Co.	Scales	335H
P. C. Gault Co.	Dialing systems	354H
Hunter Controls, Inc.	Humidity measurement	709D
Macbeth Daylighting Corp.	Color-matching equipment	834F
Scott Testers, Inc.	Testing equipment	401B
Sheffield Corp.	Testers	229G
Taylor Instrument Cos.	Process-control equipment	428B
Toledo Scale Co.	Weighing equipment	444C
Veeder-Root, Inc.	Counting devices	107A
Weston Electrical Instrument Corp.	Testing and recording equipment	707D
9. Lubricants and Lubrication Equipment		
Alemite Div., Stewart-Warner Corp.	Lubricating devices	405B
Bijur Lubricating Corp.	Lubricators	121aA
Georgia-Carolina Oil Co.	Lubricants	319H
Gulf Oil Corp.	Oils and lubricants	211G
Keystone Lubricating Co.	Lubrication equipment	402B
Lincoln Engineering Co.	Lubrication systems	510C
Masury-Young Co.	Fiber lubricants	337H
New York & New Jersey Lubricant Co.	Lubricants	109A
Pure Oil Co.	Lubricants	514C
Shell Oil Co.	Lubricants	820F
Sinclair Refining Co.	Lubricants	103A
The Texas Co.	Lubricants and processing oils	421B
10. Management Services—Manufacturers' Representatives, Consulting Engineers, Publications, Schools; Office Equipment; Supplies		
America's Textile Reporter	Textile Publication	208G
Bivins & Caldwell	Supplies	313H
Burroughs Corp.	Office equipment	340H
Carolina Supply Co.	Supplies	229aG
Coleman Co., Inc.	Manufacturers' representative	822F
Dictaphone Corp.	Office equipment	307H
Ralph Gossett & Co.	Manufacturers' representative	703D
Greenville Textile Supply Co.	Manufacturers' representative	212G
Hollister-Moreland Co., Inc.	Manufacturers' representative	230G
R. E. L. Holt, Jr., & Associates	Manufacturers' representative	813F
Karl H. Inderfurth Co.	Manufacturers' representative	833F
International Business Machines Corp.	Office equipment	449B
International Correspondence Schools	Training programs	227aG
Marchant Calculators, Inc.	Calculators	347H
McBee Co.	Planning-control systems	329H
Modern Textiles	Textile publication	122A
Monroe Calculating Machine Co.	Office equipment	343H
National Cash Register Co.	Office equipment	363H
Odell Mill Supply Co.	Manufacturers' representative	212G
Poe Hardware & Supply Co.	Manufacturers' representative	110aB
Ross Builders Supplies, Inc.	Manufacturers' representative	355H
J. E. Sirrine Co.	Engineers	205G
Stellite American Corp.	Manufacturers' representative	710D
Textile Age	Textile publication	120A
Textile Bulletin	Textile publication	204G
Textile Industries	Textile publication	408B
Textile World	Textile publication	222G
11. Materials for Machinery and Equipment		
Atlanta Brush Co.	Industrial brushes	447B
Carboloy Dept. of General Electric Co.	Cemented-carbide products	110aB
Carolina Plating & Stamping Co.	Electroplated parts	127A
Clark-Cutler-McDermott Co.	Machine mounts	102aA
Engineered Plastics, Inc.	Plastic materials	218G
General Tire & Rubber Co., Industrial Products Div.	Machine mounts	145A
Industrial Coatings, Inc.	Coating	213aG
Livingstone Coating Corp.	Plastic coating	320H
W. O. & M. W. Talcott, Inc.	Belt fasteners	406B
12. Materials Handling, Packaging, and Shipping Facilities		
Acme Steel Products Div., Acme Steel Co.	Strapping equipment	515C
Alvey Conveyor Mfg. Co.	Conveyors	705D
American MonoRail Co.	Overhead handling equipment	111A
American Paper Tube Co.	Shipping containers and boxes	108A
Atlanta Paper Co.	Containers	362H
William Bal Co.	Boxes and trucks	310H
Bassick Co.	Casters	410B
Clark Equipment Co.	Lift trucks	812F
Colson Corp.	Casters and wheels	472C
Container Corp. of America	Folding cartons	127aH
Darnell Corp. Ltd.	Casters and wheels	212G
Dillard Paper Co.	Paper products	336H
Excel Textile Supply Co.	Trucks and boxes	224aG
Fairbanks Co.	Casters and trucks	812aF
Faultless Caster Corp.	Casters and bobbin hangers	513C
Fisher Mfg. Co.	Materials-handling equipment	318H
Gladwin Plastics, Inc.	Plastic boxes	357H
Gower Mfg. Co., Engineered Products Div.	Lifts and trucks	506C
Hyster Co.	Lift trucks	467B
Kennett Equipment & Machinery Co.	Materials-handling equipment	335aH
Lamson Mobilift Corp.	Conveyors and trucks	842F
W. T. Lane & Bros., Inc.	Canvas baskets and trucks	212G
Louden Machinery Co.	Monorail equipment	704D
Marsh Stencil Machine Co.	Marking equipment	353H
Mechanical Handling Systems, Inc.	Materials-handling system	469B
Meese, Inc.	Doffing and roving trucks	314H
Minnesota Mining & Mfg. Co.	Tapes	445B
National Vulcanized Fibre Co., Fibre Specialty Div.	Materials-handling equipment	473B
Nutting Truck & Caster Co.	Casters	610E
Old Dominion Box Co., Inc.	Boxes	301H
J. C. Paddock Co.	Hand trucks	442B
Permacel Tape Corp.	Tapes	334H
Rapids-Standard Co., Inc.	Conveyors and trucks	603E
Signode Steel Strapping Co.	Strapping machinery	805F
Stanley Works, Steel Strapping Div.	Steel strapping	832F
Steele Canvas Basket Co., Inc.	Baskets and trucks	326H
Sterling Engineering & Mfg. Co.	Boards and trucks	215bG
Sunray Co.	Materials-handling equipment	821F
Towmotor Corp.	Lift trucks	825F
Union Bag & Paper Corp.	Containers	366H
Unistrut Products Co.	Storage equipment	708D
Wrenn Bros.	Materials-handling equipment	471B
Wright-Batcheldor Corp.	Casters	331H
Yale & Towne Mfg. Co., Yale Materials Handling Div.	Lift trucks	822F
13. Power Generation and Transmission		
Allis-Chalmers Mfg. Co.	Drives and motors	437B
American Pulley Co.	Power-transmission equipment	233G
Browning Mfg. Co.	Power-transmission equipment	312H
Carolina Bearings Div., Tennessee Bearings, Inc.	Bearings	505C
Diehl Mfg. Co.	Motors and drives	114A
Gates Rubber Co.	Drives	419B
Graton & Knight Co.	Leather belting	507C
Hyatt Bearings Div., General Motors Corp.	Roller bearings	104A
Moffatt Bearings Co.	Bearings	240G
Power Transmission Co.	Fluid drives	308H
Precision Gear & Machine Co.	Bearings, comb boxes, frames	136A
Reeves Pulley Co.	Variable-speed drives	253G
SKF Industries	Bearings	511C
Slip-Not Belting Corp.	Leather belting	358H
Southern Belting Co.	Belting	425B
Southern States Equipment Corp.	Drives	244G
Ton-Tex Corp.	Belting	813F
United Motors Service, Div. of General Motors Corp.		110bB
T. B. Wood's Sons Co.	Power-transmission equipment	228G
14. Weaving and Warp-Preparation Equipment and Supplies		
Allen Beam Co.	Beams, warpers, creels	101A
Anheuser-Busch, Inc., Corn Products Dept.	Starches	403B
Atlantic Gelatin, Div. General Foods Corp.	Gelatin and gelatin products	501C
Bachmann Uxbridge Worsted Corp.	Slasher dryer	501C
Bahan Textile Machinery Co.	Weaving machinery	140A
Barber-Colman Co.	Warp-tying and -drawing equipment	217G, 250G
Batson Mfg. Co.	Loom accessories	220G
Bullard Clark Co.	Loom supplies	443B
Carolina Belting Co.	Loom leathers and strapping	252G
Clinton Foods, Inc.	Corn products	206G
Cocker Machine & Foundry Co.	Warpers and slashers	214G
Colby Cooperative Starch Co.	Starches	501C
Continental-Diamond Fibre Co.	Loom parts, containers	106A
Corn Products Sales Co.	Sizes	452B
Dayton Rubber Co.	Weaving accessories	135A
Dixie Leather Corp.	See Graton & Knight	507C
W. D. Dodenhoff Co., Inc.	Loom supplies	108aB
Draper Corp.	Looms	132H
Edda International Corp.	Warp-tying and reed-grinding machines	503C
Garland Mfg. Co.	Loom supplies	604E
Gates Rubber Co.	Loom accessories	419B
Clair H. Gingher & Son	Loom supplies	317H
Graton & Knight Co.	Loom leathers	507C
Greenville Belting Co.	Loom supplies and reed cleaner	263G
Ira L. Griffin & Sons	Slashing equipment	501C
Hayes Industries, Inc.	Light-metal beams	813F
Hubinger Co.	Starches and sizing products	501C
Hunt Loom & Machine Works, Inc.	Looms and parts	129A
Keever Starch Co.	Starches	407B
Walter Kidde & Co., Inc.	Compensators and stop motions	261G
H. F. Livermore Corp.	Loom supplies	109aB
Manton-Gaulin Mfg. Co., Inc.	Homogenizer	504C
National Starch Products, Inc.	Starches and resins	439B
Norris Bros.	Loom supplies	813F
Orr Felt & Blanket Co.	Slasher and cleaner cloth	116A
Pavia Shuttle Co.	Shuttles	813F
Pioneer Heddle & Reed Co.	Loom supplies	212G
Robert Reiner, Inc.	Beamers, warpers, creels	138A
Rice Dobby Chain Co.	Loom supplies	813F
Ruti Machinery Works Ltd.	Weaving machinery	605E
Seydel-Woolley & Co.	Warp lubricator	234G
Slip-Not Belting Corp.	Loom leathers	358H
B. Snowiss Fur Co.	Shuttle fur	813F
Southern Loom Development Co.	Looms	517C
A. E. Staley Mfg. Co.	Sizes and finishes	412B
Steel Heddle Mfg. Co.	Loom supplies	137A
Texize Chemicals, Inc.	Sizing products	411B
H. J. Theiler Corp.	Loom equipment	828F
Ton-Tex Corp.	Loom strapping	813F
U S Bobbin & Shuttle Co.	Warper beams	817F
Watson-Williams Mfg. Co.	Shuttles	128A
West Point Foundry & Machine Co.	Slashers and creels	837F
15. Yarn-Production, Winding, and Twisting Equipment and Supplies		
Abbott Machine Co., Inc.	Radial quiller	701D
Adams, Inc.	Roving-frame stop motion	441xB
Aldrich Machine Works	Cotton openers and pickers	264G
Allentown Bobbin Works, Inc.	Bobbins and spools	316H
American Crayon Co.	Crayons and markers	332H
American Lava Corp.	Thread guides	212G
American Rieter Co., Inc.	Spinning-room equipment	102A
Armstrong Cork Co.	Roll coverings and aprons	141A
Ashworth Bros., Inc.	Card clothing	123A

CONTINUED ON PAGE 154

TUBES

FOR EVERY TEXTILE NEED . . .

STANDARD OR SPECIAL

SONOCO produces spiral, convolute, parallel or drawn tubes in sizes from ⅛" to 36" I.D., in any practical length and wall thickness. Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed and with crimped or burnished ends.

Over 50 years' experience enables us to help you with any problem that can be solved with a paper tube!

sonoco
SERVES THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MAIN OFFICE—HARTSVILLE, S. C.

MYSTIC, CONN. LOS ANGELES, CAL. BRANTFORD, ONT. LOWELL, MASS.
PHILADELPHIA, PA. AKRON, IND. GARWOOD, N.J. GRANBY, QUEBEC

MEXICO: Sonoco de México, S. A., Apartado 10239, Mexico, D. F.

DEPENDABLE SOURCE OF SUPPLY

VISIT SONOCO • Booth 241 • SOUTHERN TEXTILE EXPOSITION • OCTOBER 4-8

INDEX TO EXHIBITORS BY PRODUCTS *(Continued)*

15. Yarn-Production, Winding, and Twisting Equipment and Supplies (Continued)

EXHIBITOR	PRODUCT	BOOTH NO.
Atkinson, Haserick & Co	Yarn-production equipment	926F
Binney & Smith, Inc	Chalks and crayons	303H
Benjamin Heath Co	Card clothing	115A
Bowen-Hunter Bobbin Co	Bobbins	212G
Cen-Tennial Cotton Gin Co	Cotton-cleaning equipment	841F
Charlotte Mfg Co	Card clothing	142A
Coats & Clark, Inc	Nylon travelers	211bG
Collins Bros Machine Co	Twisting machinery	833F
Davis & Furber Machine Co	Card clothing, tapes, aprons	215aG
Dayton Fuhrer Co	Spinning accessories	135A
Deering, Milliken Research Trust	Twisting machine	219G
Dixon Corp	Drafting supplies	816F
W. D. Dodenhoff Co., Inc	Blending equipment	108aB
Engineered Plastics, Inc	Bobbins and tubes	218G
Glover Southern, Inc	Bobbins	813F
Gossett Machine Works, Inc	Yarn-equipment accessories	226G
Gossett-Mason, Inc	See Gossett Machine Works, Inc.	226G
Hartford Machine Screw Co	Spindles	106a
Herr Mfg. Co., Inc	Flyers and rings	262G
John Hetherington & Sons, Inc	Card-room supplies	602E
R. H. Hood Co	Combing equipment	227G
Hope Webbing Co	Webbing	212G
Howard Bros. Mfg. Co	Card clothing and sample cards	245Gt
Ideal Industries, Inc	Drawing equipment	238G
Ideal Machine Shops, Inc	Spindles, top rolls	238G
Walter Kidde & Co., Inc	Tension-control devices	261G
Kirkman & Dixon Machinery Co	Waste processing machinery	235G
Lambeth Rope Corp	Tapes and bands	221aG
Lenkotex Co., Inc.	Yarn-equipment supplies	840F
Lestershire Spool & Mfg. Co.	Bobbins	212G
Marquette Metal Products Co.	Spindles	260G
Medley Mfg. Co., Inc.	Yarn equipment	836F
Mitchell-Bissell Co.	Thread guides	813F
Mona Industries, Inc.	Yarn-conditioning machine	802F
National Ring Traveler Co.	Ring travelers	213G
Page-Madden Co.	Thread guides	833F
Proctor & Schwartz, Inc.	Wool equipment	247G
Ragan Ring Co.	Spinning and twister rings	105A
Roberts Co.	Spinning accessories	125A
E. F. Rose & Co.	Clearers	211aG
B. S. Roy & Son Co.	Grinding and stripping equipment	207G
W. Schlafhorst & Co.	Quiller	427xE
Seydel-Woolley & Co.	Twist setter	234G
SKF Industries, Inc.	Spinning accessories	511C
James Smith & Son, Inc.	Noble-comb equipment	227G
Sonoco Products Co.	Cones, spools, cots	241G
Southern States Equipment Corp.	Coiler equipment	244G
Southern Weaving Co.	Spinning tapes	813F
Spintex Spinnereimaschinenbau G. M.B. H	Spinning equipment	840F
Steel Heddle Mfg. Co.	Bobbins	137A
Superior Bolster Co	Bolsters	323aH
Tweedales & Smalley (1920) Ltd.	Opening machinery	601E
U. S. Ring Traveler Co.	Travelers	309H
U. S. Textile Machine Co.	Winding and twisting machines	121bA
Universal Winding Co.	Winding and twisting machines	203G
Victor Ring Traveler Co.	Ring travelers	224G
Whitin Machine Works	Yarn-manufacturing equipment	257G
Whitinsville Spinning Ring Co.	Rings and accessories	209G

Who and What at the Show

ABBOTT MACHINE CO., INC. (701D)
Wilton, N. H.

Features an automatic 12-spindle radial quiller.

Representatives at booth:
S. L. Abbott F. L. Hendricks
E. W. Skinner S. A. Roane
L. S. Ligon, Sr.
L. S. Ligon, Jr.

ACME STEEL PRODUCTS DIV., ACME STEEL CO. (515C)
2840 Archer Ave., Chicago, Ill.

Features power strapping machines, tools, and accessories.

Representatives at booth:
W. S. Huss J. B. Farr
G. R. Easley S. F. Woodley
R. C. Camp E. S. Lumpkin
E. H. Jones J. J. Jorgensen
G. L. Daniel J. H. Scott
M. M. Brown E. E. Drewry

ADAMS, INC. (441xB)
4 E. Lewis Plaza, Greenville, S. C.

Features a drop-wire roving-frame stop motion.

Representatives at booth:
S. J. Adams C. S. Adams

ALDRICH MACHINE WORKS (264G)
Greenwood, S. C.

Features a Super-Jet cotton-cleaning system and a synchronized single-process picker.

Representatives at booth:
A. P. Aldrich, Jr.
B. R. Morris W. D. Wornall
B. G. McClintock

ALEMITE CO., DIV. OF STEWART-WARNER CORP. (405B)
1826 Diversey Pkwy., Chicago, Ill.

Features lubricating devices.

Representatives at booth:
M. Smith J. Esbenshade

ALLEN BEAM CO. (101A)
130-156 River Rd., New Bedford, Mass.

Features wooden warper beams, wooden beam heads, adjustable wooden loom-beam heads, wooden loom beams, a high-speed all-fiber warper, a high-speed all-fiber creel, and replacement parts.

Representatives at booth:
W. L. Peterson J. E. Jones
D. J. Laffey W. F. Tinsley
F. J. Murphy J. Bowler, Jr.
A. W. Olson

ALLEN-BRADLEY CO. (414B)
136 W. Greenfield Ave., Milwaukee, Wis.

Features manual and magnetic motor starters and motor-control accessories.

ALLENTOWN BOBBIN WORKS, INC. (316H)
431 N. 14th St., Allentown, Pa.

Features bobbins and spools for processing fine-denier yarns.

Representative at booth:
H. W. Mack

ALLIED PRODUCERS & SUPPLY CO., INC. (323H)
425 E. Hancock Ave., Athens, Ga.

Features primes, finishes, floor cleaner, spot remover, tar remover, and scours. New kier and acid cloth spot removers and new cloth tar removers and scours will be included in the display.

Representatives at booth:
J. A. Rachels, Jr.
T. L. Elder, Jr.

ALLIS-CHALMERS MFG. CO. (437B)
P. O. Box 512, Milwaukee, Wis.

Features a card drive, loom motors, and V-belt drive equipment.

Representatives at booth:
R. H. Cline W. O. Vaughn
J. J. Greagan, Jr.
A. W. Robinson
R. L. McDermott
L. T. Brueggeman
H. A. Wilson R. N. Brown

LOUIS ALLIS CO. (803F)
427 E. Stewart St., Milwaukee, Wis.

Features adjustable - speed drives, spinning-frame motors, loom motor, and self-cleaning textile motors. New equipment that will be shown includes a spinning-frame motor, an open drippproof rerated motor, and a totally enclosed, fan-cooled explosionproof motor.

Representatives at booth:
W. R. Becker L. Allis, Jr.
J. B. Munson R. J. Weesner
C. G. Skidmore M. Aynes
W. J. Altschwager H. Kelley
M. Weitekamp C. T. Nash
R. J. Overstreet R. A. Zastrow

ALVEY CONVEYOR MFG. CO. (705D)
9301 Olive St. Rd., St. Louis 24, Mo.

Features pictures of typical Alvey conveyor installations in the textile field.

Representatives at booth:
C. Easley C. A. Burton
C. H. Adamson

AMERICAN AIR FILTER CO., INC. (460B)
215 Central Ave., Louisville, Ky.

Features an automatic lint filter, an electronic precipitator, and unit air filters.

Representatives at booth:
R. V. Matkin H. Noles
E. V. Overcash J. May
S. V. Howard K. Cousart
H. E. Dellinger D. McRae
W. S. Mitchell
T. O. Curlee, Jr.
C. F. Sexton
J. M. Rittelmeyer

AMERICAN CRAYON CO. (332H)
Sandusky, Ohio

Features textile-mill crayons, including a new fluorescent crayon, industrial markers, and art and handcraft supplies.

Representatives at booth:
J. E. Hester W. T. Schleicher

AMERICAN FLOOR PRODUCTS CO. (359H)
4922 Wisconsin Ave., N. W., Washington, D. C.

Features floor mats, stair treads, floor matting, and non-slip floor abrasives.

Representatives at booth:
E. C. Bentley W. Brooks

ANOTHER PROFIT-MAKER from U.S. TEXTILE

these machines are
NOW IN PRODUCTION

a new, low-cost HEADLESS PACKAGE twister

with new shock-proof traverse motion

available with
stationary mandrels to handle paper tube packages!

NEW U.S. ACME
COMBO DOUBLE-DECK TWISTER

A NEW, NARROW-WIDTH COMBINATION MACHINE that builds over-wind or under-wind packages from STRAIGHT, CONICAL or BOTTLE-TYPE SUPPLY PACKAGES! Here's a twister that gives you low first cost, low operating cost and fast write-off!

the new SHORT-CUT METHOD pair!

U.S. ACME
VERTICAL SPOOLER

Spools, cleans and oils in one high-speed operation . . . producing new, precision balanced packages—
BOTTLE TYPE OR CONICAL!

write or phone for complete information

— OUR SERVICE POLICY LEADS THE FIELD —

U. S. TEXTILE MACHINE CO.
SCRANTON 8, PENNA.

AMERICAN LAVA CORP. (212G)
Manufacturers Rd. & Cherokee Blvd., Chattanooga, Tenn.
Features thread guides.
Representatives at booth:
J. B. Shacklett J. S. Gosnell
J. E. Spearman J. W. Crisp

AMERICAN MONORAIL CO. (111A)
13,107 Athens Ave., Cleveland, Ohio
Features automatic cleaning equipment and overhead handling equipment. A new loom cleaner will be displayed.
Representatives at booth:
C. L. Fell E. F. Kulp
J. L. Fischke J. Welborn
E. H. Doerger C. P. Newell
H. A. Rehfeld H. McKinney
L. R. McEachern
M. O. Bradshaw

AMERICAN PAPER TUBE CO. (108A)
93 Hazel St., Woonsocket, R. I.
Features a general product display.
Representatives at booth:
H. L. Amrhein R. J. Guerin
G. M. Sanford C. Rimmer
S. F. Adams

AMERICAN PULLEY CO. (233G)
4200 Wissahickon Ave., Philadelphia, Pa.
Features power transmission equipment.
Representatives at booth:
J. E. Williams
R. H. Jackson

AMERICAN RIETER CO., INC. (102A)
Arlington, N. J.
Features a new hydraulic control precision cot-grinding machine, roller-bearing spindles, ball-bearing top rolls, chromium-plated flyers, and other accessories.
Representatives at booth:
J. F. Dulken C. Rosenthal
W. B. Plowden
D. E. Williams
N. L'E. Fawcett
F. E. Krachenmann

AMERICAN SAFETY TABLE CO. (230G)
224 Fifth Ave., New York, N. Y.

AMERICA'S TEXTILE REPORTER (208G)
286 Congress St., Boston, Mass.
Features a textile publication.

ANHEUSER-BUSCH, INC., CORN PRODUCTS DEPT. (403B)
1208 Johnston Bldg., Charlotte, N. C.
Features starches. New-type pearls and gums will be shown.
Representatives at booth:
C. H. Conner, Jr.
T. M. Robertson, Jr.
E. P. Gillan Dr. B. Scallett
K. N. Battenfield

ARMSTRONG CORK CO. (141A)
Lancaster, Pa.
Features roll coverings, aprons, buffing equipment, loom supply items, and miscellaneous textile-mill supplies. Improved top-roll covering, long-draft aprons, and a loom press-roll covering are among the new equipment to be shown.
Representatives at booth:
J. V. Ashley J. T. Vernon
W. T. Coker A. M. Ankrom
T. L. Hill T. H. Weaver
H. H. Jordan C. H. Cooper
A. C. Littlejohn
W. A. Simmons

ARMSTRONG MACHINE WORKS (453B)
Three Rivers, Mich.
Features steam, air and air-relief traps.
Representatives at booth:
O. E. Ulrich T. M. Reed

ASHWORTH BROS., INC. (123A)
Fall River, Mass.
Features card clothing, napper machinery, metallic wire, lickerin and garnett wire.
Representatives at booth:
R. C. Ashworth, Jr. J. M. Reed
A. E. Johnston, Jr.
W. J. Flynn, Jr. H. Ashworth
J. E. Seacord W. Halstead
A. E. Johnston, Sr.
T. Hart G. A. Davis
F. L. Armitage R. Clary

ATKINSON, HASERICK & CO. (826F)
211 Congress St., Boston, Mass.
Representatives at booth:
F. E. Bozeman P. W. Ellis

ATLANTA BRUSH CO.(447B)
P. O. Box 1358, Atlanta, Ga.
Features industrial brushes.
Representatives at booth:
W. C. Perkins A. L. Dillard
G. B. Snow T. A. McNeill

ATLANTA PAPER CO. (362H)
P. O. Box 4417, Atlanta, Ga.
Features folding cartons, corrugated shipping containers, and textile packaging specialties.
Representatives at booth:
V. C. Shutze R. L. Gerson
M. D. McMullen A. Fotov

ATLANTIC GELATIN DIV., GENERAL FOODS CORP. (501C)
Hill St., Woburn, Mass.
Features gelatin and gelatin products.

BACHMANN UXBRIDGE WORSTED CORP. (501C)
Uxbridge, Mass.
Features the Gentle - Air slasher-dryer.
Representatives at booth:
E. S. Creighton P. Wenzel

BAHAN TEXTILE MACHINERY CO. (140A)
Greenville, S. C.
Features booms, loom assemblies, and loom parts.
Representatives at booth:
W. H. Maudling W. L. Wilson
J. A. Simmons C. L. Greene
W. R. Rothrock P. Bahan

BAHNSON CO. (248G)
Winston-Salem, N. C.
Features air-conditioning, humidification, and cleaning apparatus. Two new types of automatic traveling cleaners will be on display in addition to the Allred cleaner.
Representatives at booth:
A. H. Bahnson A. E. Thomas
A. Page I. L. Brown
W. M. Fulp E. G. Byrum
R. B. Crosland

WILLIAM BAL CORP. (310H)
2 Johnson St., Newark, N. J.
Features materials - handling specialty containers, including mill boxes, tote boxes, hand trucks, barrels, and bins.
Representatives at booth:
H. E. Gill D. Walsh

BARBER-COLMAN CO. (217G, 250G)
Rockford, Ill.
Features a new warp-tying machine and a warp-drawing machine.
Representative at booth:
F. D. Taylor

BARRELED SUNLIGHT PAINT CO. (221bG)
12 Dudley St., Providence, R. I.
Features engineered colors for better working conditions, including gloss mill white, semi-gloss wall colors, dado colors, a mildew-resistant undercoat, a mildew-resistant gloss, machinery and equipment enamel, porch and floor enamel, safety and piping colors, acid- and alkali-resistant coating, chemic enamel, maintenance black, liquid aluminum, high-heat resistant aluminum, primers, varnishes, floor sealers, and odor-free decorative finishes for offices.
Representatives at booth:
H. F. Eastwood H. A. Solie
T. C. Roggenkamp L. Park
P. R. Singletary C. L. Duffie

THE BASSICK CO (410B)
Bridgeport, Conn.
Features industrial casters, including new heavy-duty all-steel casters with fully hardened raceways with sealed bearings.
Representatives at booth:
T. J. Israel E. P. Ripley
R. Huber

BATSON MFG. CO. (220G)
P. O. Box 1055, Greenville, S. C.
Features wood turnings, picker sticks, binders, skewers, cones, shuttle fur, temple rolls, shell rolls, beam barrels, bobbins, cones, check straps, loom strapping, anchoring pads, pressed and woven felt goods, neoprene pads, wire fittings, static neutralizers, and redraw and winder spindles.
Representatives at booth:
J. P. Batson R. Owings
L. P. Batson D. Murphy
E. Batson J. Williams

BAUSCH & LOMB OPTICAL CO., SOUTHEASTERN DIV. (361H)
Rhodes Bldg., Atlanta, Ga.
Features Ortho-Raters, occupational and protective eyewear, and magnifiers. New illuminated magnifiers will be shown.
Representatives at booth:
V. Schroven C. J. Moon
L. Craven J. B. Hickey
P. Stratton A. T. Vannerson

BIJUR LUBRICATING CORP. (121aA)
Rochelle Park, N. J.
Features textile-machine lubricators.
Representatives at booth:
W. Wright C. Lassiter
F. Hewitt H. Auten
J. Henderson

BINNEY & SMITH, INC. (303H)
380 Madison Ave., New York, N. Y.
Features textile chalks and marking crayons.
Representatives at booth:
V. R. Watson W. King
W. Alexander W. Perry
E. B. Skedden

BIRCH BROS., INC. (242G)
32 Kent St., Somerville, Mass.
Features sewing machines, an adjustable-stroke vacuum extractor, an adjustable spiral-opening roll unit, rubber expander rolls, a two-roll laboratory padder, an opening and folding machine, a new ball-bearing counterbalanced tacking machine, and an electrically controlled conical opener.
Representatives at booth:
J. C. Cosby C. W. Birch, Jr.
F. W. Birch

BIVINS & CALDWELL (313H)
High Point, N. C.

BENJAMIN BOOTH CO. (115A)
Allegheny Ave. & Janney St., Philadelphia, Pa.
Features card clothing.
Representatives at booth:
E. A. Snape, Jr. O. D. Landis
N. E. Aderhold C. G. Stover

BOWEN HUNTER BOBBIN CO. (212G)
East Corinth, Vt.
Representative at booth:
E. A. Belville

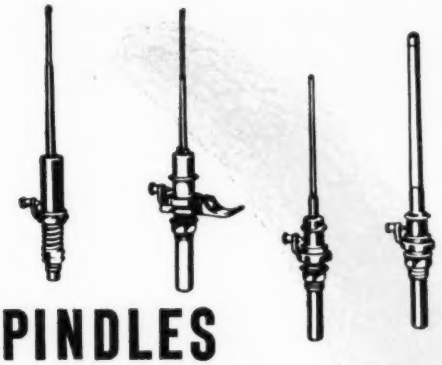
BROWNING MFG. CO. (312H)
Maysville, Ky.
Features V-drives, roller-chain drives, Poly-V drives, paper pulleys, and flexible couplings.
Representatives at booth:
L. L. Browing
T. F. Jones
H. Ives

BRUSH ELECTRONICS CO. (237G)
3405 Perkins Ave., Cleveland, Ohio
Features the tension analyzer, picker-lap tester, imperfection counter, and uniformity analyzer.
Representatives at booth:
D. C. Lynch A. Ondis
A. J. W. Novak R. Bolden
L. L. Anderson C. Burchwell
J. P. Arndt A. Walcutt
D. Gaskill

BULLARD CLARK CO. (443B)
Danielson, Conn.
Features lug straps, strapping, picker and jack sticks, sweep-sticks and connectors, dobby cords, pickers, bumpers, race plates, binders, swells, cloth-roll blocks, box plates, brake lining, and sand- and take-up-roll covering.
Representatives at booth:
E. J. Bullard C. W. Cain
W. R. Muller W. Lundgren
S. B. Henderson
L. L. Froneberger
R. M. Briggs, Jr.
J. W. Normington T. Soucy, Jr.
F. W. Braver B. Heacock
J. W. Hollingsworth

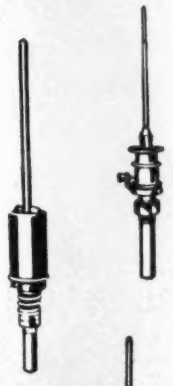
BURROUGHS CORP. (340H)
Greenville, S. C.
Features a billing machine, production-control machine, payroll-writing and tax-reporting machine, microfilm equipment, adding machines, and calculating machines.
Representatives at booth:
H. A. Mullen J. W. Duggan

Marquette

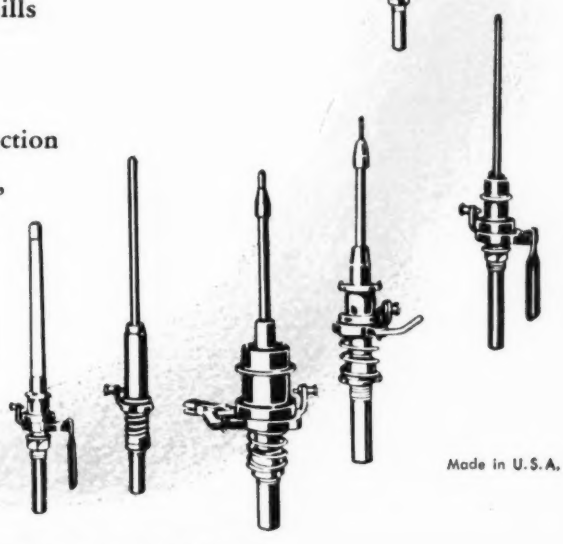


ROLLER BEARING SPINDLES
with FULL-FLOATING FOOTSTEP BEARING

Millions in Use



Year by year since 1942, more and more mills have been using Marquette Spindles as replacements and on new frames.
Marquette Spindles not only increase production through efficient operation at higher speeds, but also cut costs by their savings in power, tapes and lubricant.



● ***FOR ALL TEXTILES:***
COTTON,
SYNTHETICS,
WOOL AND WORSTED

Made in U.S.A.

PROTECTED BY U.S. AND FOREIGN PATENTS AND PATENTS PENDING

The Marquette METAL PRODUCTS COMPANY
CLEVELAND 10, OHIO • SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

Representatives: WILLIAM P. RUSSELL, BOX 778, ATLANTA, GA. • W. J. HOWELL, 502 N. 12th ST., BESSEMER CITY, N. C.
C. H. WYNN, MOUNT HOLLY (P. O. ROUTE 4, CHARLOTTE, N. C.

Also Manufacturers of: HYDRAULIC GOVERNORS • PRECISION PARTS AND ASSEMBLIES • WINDSHIELD WIPERS FOR AIRCRAFT
SPRING CLUTCHES • FUEL OIL PUMPS • FUEL OIL INJECTORS • ROTARY HIGH PRESSURE OIL FIELD PUMPING MACHINERY

J. B. Baxter P. S. Mims
E. C. Dawson R. G. Revis
C. W. Boyter S. N. Smith, Jr.
G. A. Martin R. B. Garland
A. G. McIntyre

CARBOLOY DEPT. OF GENERAL ELECTRIC CO. (110aB)
11,155 E. Eight Mile Dr., Detroit, Mich.
Features products manufactured from cemented carbide.

CAROLINA BEARINGS DIV., TENNESSEE BEARINGS, INC. (505C)
407 Pendleton St., Greenville, S. C.
Features ball-bearing card-cylinder bearings, card lickerin bearings, card-doffer bearings, ball-bearing units for looms and spinning frames, bronze bushings, bar stock, and bearing-removal tools. New anti-friction bearings will also be shown.
Representatives at booth:
E. F. Brown D. Rhodes
G. M. Boullion L. Lammers
H. L. Cox D. Rowe
J. Phelps B. Espieg
J. Boling D. Mason

CAROLINA BELTING CO. (252G)
19 Blair St., Greenville, S. C.
Features loom leathers and strapping.
Representatives at booth:
C. F. Miller W. H. Gowan
J. W. Slaughter F. F. Griffin
F. W. Hesse

CAROLINA DETERGENTS, INC. (801F)
P. O. Box 101, Anderson, S. C.
Representatives at booth:
H. O. Comp K. L. Roesch
G. W. Speer E. H. Hines

CAROLINA PLATING & STAMPING CO. (127A)
P. O. Box 1387, Greenville, S. C.
Features a miniature electroplating shop with samples of various textile machine parts before and after they have been electroplated.
Representatives at booth:
R. J. Irwin J. F. Pace
G. P. Martin S. L. Huffman
J. L. Huffman H. E. Masters
W. L. Blackwell

CAROLINA SUPPLY CO. (229A)
35 W. Court St., Greenville, S. C.
Features a reception booth.

CEN-TENNIAL COTTON GIN CO. (841F)
Columbus, Ga.
Features a fiber opener, a separator, an aerator, blending feeders, and a feed table.
Representatives at booth:
J. E. Brown A. Harmon

CHARLOTTE MFG. CO. (142A)
1300 S. Mint St., Charlotte, N. C.
Features card clothing, card bearings, card-grinder drives, and a card-setting machine.
Representatives at booth:
R. P. Bullard
W. D. Ennis L. T. Sanford
A. K. Glover S. L. Bernardo
E. G. Glover H. Geigher
R. G. Spratt M. Rogers
F. A. Hipp W. R. Freeman

CHEMSTRAND CORP. (512C)
350 Fifth Ave., New York, N. Y.
Features Acrilan acrylic fiber and Chemstrand nylon.
Representatives at booth:
R. E. Smith S. J. Davis
W. H. Hindle M. R. Dalton

CLARK CONTROLLER CO. (706D)
1146 E. 152nd St., Cleveland, Ohio
Features electrical controls.
Representatives at booth:
G. Wallace, Jr. R. Ranson

CLARK-CUTLER-McDERMOTT CO. (102aA)
Franklin, Mass.

CLARK EQUIPMENT CO., INDUSTRIAL TRUCK DIV. (812F)
Battle Creek, Mich.
Features gas and electric fork-lift trucks. A new pallet truck will be on display.
Representatives at booth:
J. J. Shand H. R. Hansen
J. R. Titlow P. P. Lukas
L. A. DePolis G. E. Boyce
E. V. Wiley

CLINTON FOODS, INC. (206G)
Clinton, Iowa
Features a reception booth.
Representatives at booth:
A. C. Junge J. F. Rogers
R. C. Rau C. F. Cline, Jr.
B. L. Estes J. A. Tomlin
G. Gilbert E. F. Patterson

COATS & CLARK, INC. (211bG)
264 Ogden St., Newark, N. J.
Features nylon travelers, sewing threads, yarns, and zippers.
Representatives at booth:
R. H. Wilcox T. B. Farmer

COCKER MACHINE & FOUNDRY CO (214G)
213 Chestnut St., Gastonia, N. C.
Features a reception booth.
Representatives at booth:
J. Cocker D. L. Friday
J. Bodansky H. W. Groce
F. H. Cunningham, Jr.

COLBY COOPERATIVE STARCH CO. (501C)
Caribou, Me.
Features starches.
Representative at booth:
A. P. McLean

COLEMAN CO., INC. (822F)
305 Rutherford Rd., Greenville, S. C.
Features Yale & Towne fork-lift trucks, long-draft change-overs, and canvas baskets.
Representatives at booth:
J. P. Coleman H. Ford
E. A. Brigham P. Moreland
M. R. Hawley B. Boger

COLLINS BROS. MACHINE CO. (833F)
Pawtucket, R. I.
Features a novelty twister, a three-speed attachment for the production of novelty yarns, a wet twister, and a big ring twister.
Representatives at booth:
H. Collins B. Collins

COLSON CORP. (472B)
Elyria, Ohio
Features casters, wheels, and materials-handling equipment. New plastic-, metal-, and rubber-tired wheels with thread guards will be on display.
Representatives at booth:
W. C. Shea R. S. McCauley

CONTAINER CORP. OF AMERICA (127aA)
3300 E. Market St., Greensboro, N. C.
Features folding cartons and machinery for forming folding cartons.
Representatives at booth:
T. L. Benson, Jr. R. H. Dale
R. G. Macintosh

CONTINENTAL-DIAMOND FIBRE CO. (106A)
Newark, Del.
Features vulcanized-fibre textile containers, Celoron silent gears, Dilecto pot eyes, and fibre and Celoron loom parts.
Representatives at booth:
H. M. Dexter C. B. Haynes
A. Gray O. Thomas
G. von Seth D. Crist
C. L. Simmons, Jr.

CORN PRODUCTS SALES CO. (452B)
17 Battery Place, New York, N. Y.
Representatives at booth:
J. M. Coe E. G. King
A. A. Harden G. E. Wood
W. R. Joyner H. Harris
H. L. Bailey J. R. Hill
J. A. Simpson L. H. Kelley
J. C. Kulze, Jr. H. Baker
J. M. Adcock

CURTIS & MARBLE MACHINE CO. (202G)
72 Cambridge St., Worcester, Mass.

CUTLER-HAMMER, INC. (431B)
315 N. 12th St., Milwaukee, Wis.
Features a. c. magnetic starters with three-coil overload protection, lint-tight loom switches, pushbutton stations, safety switches, and unit breakers.
Representatives at booth:
F. A. Wright G. E. Hunt
L. P. Niessen C. D. Capelle
M. R. Brice R. H. Hanson
J. S. Trudgeon F. L. Sheram
F. A. Miller W. S. Eanes
W. L. Hampton

DAILY NEWS RECORD (210G)
7 E. 12th St., New York, N. Y.
Features a textile publication.

DARNELL CORP. LTD. (212G)
60 Walker St., New York, N. Y.
Features casters and wheels.
Representatives at booth:
A. H. Seymour A. L. Foster

DAVIS & FURBER MACHINE CO. (215aG)
1637 W. Morehead St., Charlotte, N. C.
Features card clothing, tapes, and aprons.
Representatives at booth:
E. N. Atwood H. A. Newby
W. M. Truslow

DAYTON RUBBER CO. (135A)
Dayton, Ohio
Features cots, long-draft aprons, rub aprons, condenser tape, lug straps, loop pickers, checkstraps, and other products for spinning and weaving.
Representatives at booth:
J. O. Cole W. L. Morgan
E. Howell J. T. Edwardo
J. W. Torrant T. A. Sizemore
J. M. Hubbard K. K. Karns
K. C. Sparks T. W. Meighan
J. L. Davis J. R. Young
H. M. Manchester
H. C. Henderson

DEERING, MILLIKEN RESEARCH TRUST (219G)
Pendelton, S. C.

DICTAPHONE CORP. (307H)
420 Lexington Ave., New York, N. Y.
Features dictating and transcribing equipment.
Representatives at booth:
T. C. Wohlbruck C. M. Moss

DIEHL MFG. CO. (114A)
Finderne Plant, Somerville, N. J.
Features the Diehl power transmitter, loom motors, a motor built in new NEMA frame size, and an assortment of fans. New equipment to be displayed includes a ¾-hp. power transmitter, a special-purpose loom motor with built-in flywheel, a 15-hp. air-cooled motor, a new power transmitter, a fractional-horsepower transmitter, and NEMA frame-size integral horsepower general-purpose motors.
Representatives at booth:
F. A. Kolyer E. P. Turner
W. G. Stainton L. A. Wendell
H. W. Kloth A. J. Murphy

DILLARD PAPER CO. (336H)
P. O. Box 694, Greenville, S. C.

DINSMORE MFG. CO (230G)
283 Derby St., Salem, Mass.

DIXIE LEATHER CORP. (507C)
Albany, Ga.
See Graton & Knight.

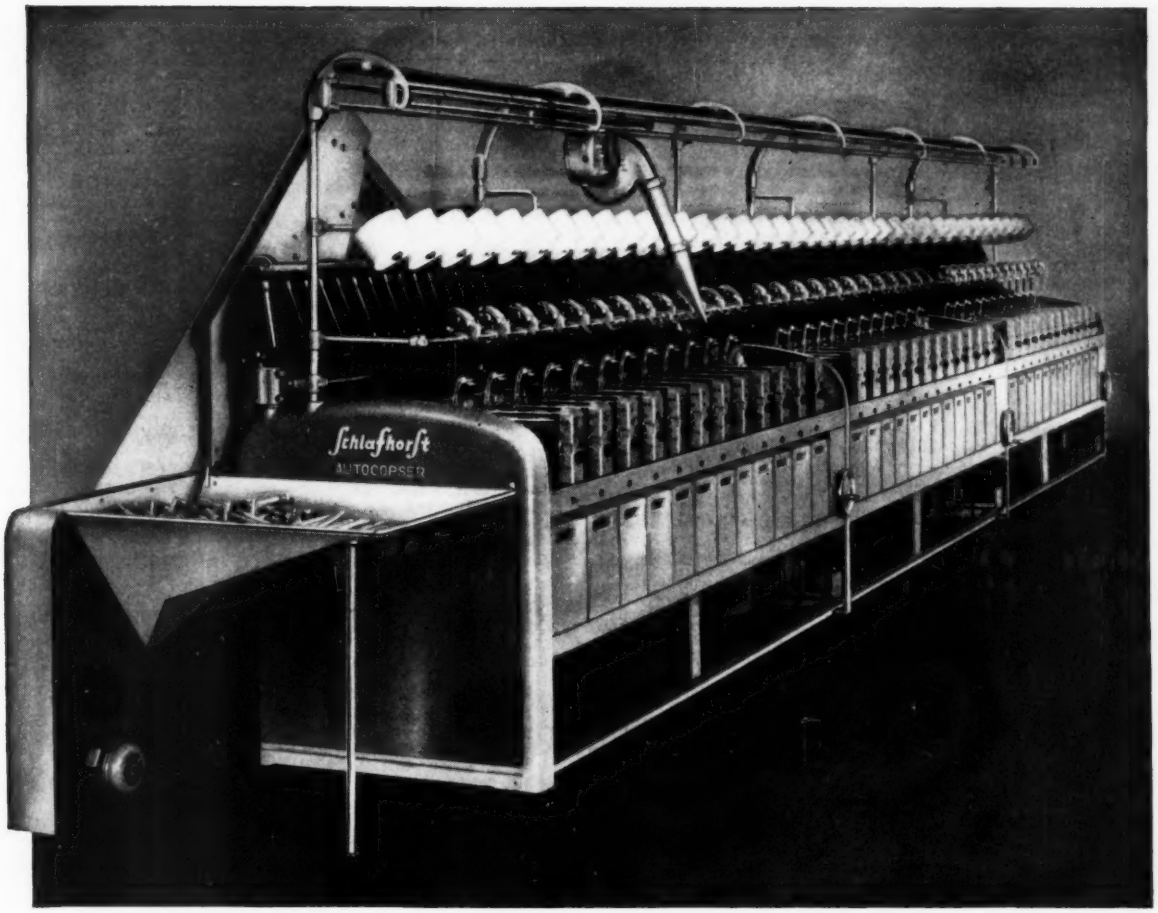
DIXON CORP. (816F)
19-21 Burnside St., Bristol, R. I.
Features a new saddle guide, a new bobbin holder, and devices to aid drafting.
Representatives at booth:
W. R. Potter R. R. Miller
R. E. L. Holt, Jr. F. New

DOBECKMUN CO. (231G)
Box 6417, Cleveland, Ohio

W. D. DODENHOFF CO., INC. (108aB)
745 Lowndes Hill Rd., Greenville, S. C.
Features blending equipment, fiber meter, spiked and plain aprons, loom supplies, specialty leather products, and textile specialty supplies. New anti-friction dobby loops will also be shown.
Representatives at booth:
Mrs. W. D. Dodenhoff
W. F. Leineweber J. Pool
C. Baker L. Shook

DOW CORNING CORP.(819F)
Midland, Mich.
Features silicone finishes for fabrics, silicone electrical insulation, silicone rubber electrical insulation and molded mechanical parts, and silicone greases and oils.
Representatives at booth:
R. B. Ehlers
C. E. Gibson
R. C. Wolfe
R. J. Rooks
R. M. Dameron

DRAPER CORP. (132A)
Hopedale, Mass.
Features a new 46-in. E-model loom, a cam box-motion loom, a wide-sheeting loom, and an archless loom.
Representatives at booth:
W. M. Mitchell J. S. Bostick
A. W. Kilgore A. H. Raditz
J. D. Marshall R. M. Morris
F. A. Ridenour J. C. Huff, Jr.
W. M. Brice, Jr. M. E. Hurst
C. H. Draper, Jr. N. Bettis
Q. S. Halliday S. A. Merchant
B. Z. Ruff J. A. Smart
T. W. Taylor G. C. McGuire
W. W. Baldwin P. A. Wilson
E. T. Austin C. H. Lapworth
J. M. Tuten F. B. Elsmore



The above illustration shows our fully automatic quiller "AUTOCOPSER".

It is equipped with rotary yarn guides that have no oscillating parts. Quilling speed is limited only by the quality of the yarn and tube material used. To meet the requirements of high speeds up to 12000 revs per minute, the machine is very substantially built. Each quilling head functions independently, entirely unaffected by automatic change of pirns or by stoppages caused by broken ends.

The special shape of the groove of the rotary yarn guide ensures firm winding at the apex of the conical yarn layers, without danger of damaging the yarn. The grooved guide drum is of wear-resistant material and runs in a single one-sided bearing. It follows the build of the quill, and thus simplifies attendance by making the quill easily accessible at every stage of its formation.

Manual servicing is confined to filling the magazines or hoppers (as the case may be) with empty tubes, taking care of occasional broken ends, and to creeling fresh packages. Attendance is reduced to a minimum and simplified throughout.

Quills are firmly held in position between a live centre and a dead one so as to run smoothly and without vibration even at highest permissible speeds.

A novel feeler device controls the advance of the yarn guide by means of a continually revolving threaded rod that is positively driven. The slightest contact between a wide but light feeler roll and the yarn body immediately engages the yarn guide feed with the negligible application of an infinitesimal amount of power. This is achieved by means of an exceedingly simple gearless shifting device developed for this special purpose. The sturdy yet extremely sensitive mechanism has the sole functions of (1) *controlling the point* at which the steadily-turning threaded spindle must provide the necessary feed and (2) the *duration of time* for which this feed is continued.

Moreover, a continual displacement of the yarn layers is obtained by suitably utilizing the alternating feed and retractive shifts.

Upon contact between yarn body and feeler roll, the required lengthwise movement of the yarn guide is obtained each time. Since the feeler roll turns without rubbing against the yarn body, the most delicate yarns can be pirned without damage, at the highest speeds. Control of feed by the above-mentioned shifting device results in perfect pirns.

W. SCHLAFHORST & CO., M. GLADBACH, GERMANY

Schlafhorst
AUTOMATIC

E. I. DU PONT DE NEMOURS & CO., INC. (808F)
Wilmington, Del.

Features an odorless paint, an industrial floor-finishing system, and a maintenance white gloss.

Representatives at booth:
M. J. Hanger H. L. Norton
R. D. Durham G. M. Drake
W. K. Sandefur
B. G. Warwick

EDDA INTERNATIONAL CORP. (503C)
468 Fourth Ave., New York, N. Y.

Features the Titan warp-tying machine and the Excelsior reed-grinding and brushing machine.

Representatives at booth:
B. Gudionsson H. A. Nagel
H. H. Thacker H. Lindqvist

ELECTRO DYNAMIC DIV. OF GENERAL DYNAMICS CORP. (110aB)
155 Ave. A, Bayonne, N. J.

Features industrial electric motors.

ENGINEERED PLASTICS, INC. (218G)
Gibsonville, N. C.

Features winder, spinner, and twister bobbins, tubes, caps, and miscellaneous machine parts and accessories fabricated from plastic materials.

Representatives at booth:
D. M. Davidson, Jr.
C. H. Phillips

EXACT WEIGHT SCALE CO. (335H)
944 W. Fifth Ave., Columbus, Ohio

Features scales, including the Shadograph and metric scales for hosiery mills.

Representatives at booth:
R. H. Sanford J. D. Beeson
J. Orta B. L. Price
J. E. Perkins T. L. Brewer

EXCEL TEXTILE SUPPLY CO. (224aG)
Lee Ave., Lincolnton, N. C.

Features materials-handling equipment, including hand trucks and boxes. A new floating-bottom truck, a new Tilt-O-Matic filling truck, and a new Roll-O-Pin truck will be included in the display.

Representatives at booth:
N. W. Eurey N. Killibrew
P. Eurey C. Eurey

FAIRBANKS CO. (812aF)
393 Lafayette St., New York, N. Y.

Features casters, trucks, unions, valves, and wheels. New equipment to be shown includes an appliance truck and a barrel truck.

Representatives at booth:
J. L. Ragland H. M. Sims
P. M. Fallon N. M. Fuller
C. W. Freeman, Jr.

FAIRBANKS, MORSE & CO. (830F)
760 Lee St., S. W., Atlanta, Ga.

Features fire pumps, turbine pumps, booster pumps, electronic scales, electric motors, stand-by generating sets, searchlights, and submersible water pumps.

Representatives at booth:
W. B. Wylly C. H. Nash
J. R. Frost G. C. Walker
W. T. Jahn E. W. Morgan

FAULTLESS CASTER CORP. (513C)
1521 N. Garvin St., Evansville, Ind.

Features casters, ball-bearing top rolls, new drawn-steel wheels, and new ball-bearing bobbin hangers.

Representatives at booth:
R. B. Burris R. S. Brice
J. H. Davis H. W. Sherlock
C. L. Yeomans

FEDERAL PACIFIC ELECTRIC CO. (350H)
50 Paris St., Newark, N. J.

Features electrical distribution equipment, including a new metal-enclosed switchgear and an improved control center.

Representatives at booth:
D. Lacock P. Maxwell
N. Ritter J. T. Fulwiler
W. May E. Guiles

FINNELL SYSTEM, INC. (110A)
500 East St., Elkhart, Ind.

FISHER MFG. CO. (318H)
Hartwell, Ga.

Features materials-handling equipment.

Representatives at booth:
J. G. Fisher
R. M. Matthews, Jr.
J. N. Fisher, Jr.

FULLER BRUSH CO., INDUSTRIAL DIV. (441B)
Hartford, Conn.

Features brushes, including brooms, blade sweeps, and power-driven brushes.

Representatives at booth:
J. C. Henry E. W. Mason
S. F. Henry F. P. White, Jr.

GARLAND MFG. CO. (604E)
Saco, Me.

Features rawhide loom pickers, picker-rod bunters, and rawhide mallets and hammers.

Representatives at booth:
H. P. Garland F. L. O'Neil
P. A. Garland F. L. O'Neil, Jr.

GASTON COUNTY DYEING MACHINE CO. (811F)
Stanley, N. C.

Features dyeing, drying, and processing equipment.

Representatives at booth:
G. H. Hacker G. Hacker
R. P. Craig

GATES RUBBER CO. (419B)
999 S. Broadway, Denver, Colo.

Features loom accessories and a spinning-frame drive. A new variable-pitch sheave with a speed-indicator scale will also be on display.

Representatives at booth:
M. J. Gilkison H. W. Haynes
R. O. Denslow B. Hunter
G. Hiekes F. Carson
J. L. Wescott H. J. Johnson

P. C. GAULT CO. (354H)
2 Aberdeen Drive, Greenville, S. C.

Features an automatic telephone system, voice paging, and a new dial defect system.

Representatives at booth:
P. C. Gault J. M. Marshall
J. C. Digh, Jr. J. M. Moffatt
H. D. Sweetser

GENERAL ELECTRIC CO. (117A)
1 River Rd., Schenectady, N. Y.

Features electric motors, controls, and drives.

Representatives at booth:
J. W. Holt R. C. Mix
C. J. Ossenfort

GENERAL ELECTRIC CO., LAMP DIV. (117A)
Nela Park, Cleveland, Ohio

Features a new high-output rapid-start fluorescent lamp and a demonstration of group replacement. Various types and sizes of lamps for the textile industry will be on display.

Representatives at booth:
A. C. Barr R. A. Lundgren
G. B. Park M. L. Harkey
F. F. Smith I. S. Meckly
R. B. Chipman, Jr.

GENERAL TIRE & RUBBER CO., INDUSTRIAL PRODUCTS DIV. (145A)
Garfield St., Wabash, Ind.

Features a loom mounted on Silentbloc mounts.

Representatives at booth:
J. L. Shafer J. W. Drook
A. W. D'Armond R. Riel
D. Camblin J. Marshall

GEORGIA-CAROLINA OIL CO. (319H)
1403 Sixth St., Macon, Ga.

Features lubricants for textile machinery.

Representatives at booth:
R. W. Jones B. N. Coggin
H. E. Coggin G. W. Dobbins

GILMAN PAINT & VARNISH CO. (426B)
Chattanooga, Tenn.

Features paints, brushes, floor sealers, and finishes.

Representative at booth:
L. C. Teeters

CLAIR H. GINGHER & SON (317H)
3801 E. Bessemer Ave., Greensboro, N. C.

Features a twist setter, shuttles, reeds, scissors, pliers, magnifying and inspection equipment. A new easy-threading tension for shuttles will also be shown.

Representatives at booth:
C. H. Gingher J. W. Davis
R. W. Bailey J. P. McBride
E. F. Atkinson

GLADWIN PLASTICS, INC. (357H)
257 Houston St., N. E., Atlanta, Ga.

Features plastic sliver guides, aluminum lifting frames, plastic tubing, Fiberglas reinforced plastic tote, duff, and quill boxes, and plastic signs.

Representative at booth:
R. F. Chambers

GLOVER SOUTHERN, INC. (813F)
Greensboro, N. C.

Features loom bobbins and spinning bobbins.

GOSSETT MACHINE WORKS, INC. (226G)
2023 W. Franklin Ave., Gastonia, N. C.

Features parts for drawing frames and cards, spindles, lifting rods, bushings, coilers, and a reciprocating clearer.

Representatives at booth:
R. W. Gossett D. W. Smith
E. C. Mason

GOSSETT-MASON, INC. (226G)
2023 W. Franklin Ave., Gastonia, N. C.

See Gossett Machine Works, Inc.

RALPH GOSSETT & CO. (703D)
8 S. Church St., Greenville, S. C.

Features thread guides, bobbins, counters and measuring devices, and self-lubricating bearings.

Representatives at booth:
R. Gossett G. G. Brown
D. C. Ragan A. P. Pieper
R. T. Hamner H. D. Clapp
H. Mahon H. F. Rose
E. Seligmann

GOWER MFG. CO., ENGINEERED PRODUCTS DIV. (506C)
129 River St., Greenville, S. C.

Features automatic lifts and special floor trucks.

Representative at booth:
R. H. Park

GRATON & KNIGHT CO. (507C)
Worcester, Mass.

Features textile leathers and leather belting.

Representatives at booth:
J. G. Henrikson
W. F. McAnulty
D. N. Patterson
E. Pickett

GREENVILLE BELTING CO. (263G)
P. O. Box 59, Greenville, S. C.

Features a new rotary automatic reed-cleaning and -polishing machine, improved synthetic shuttle linings, binder and box-plate coverings, and improved checkstraps.

Representatives at booth:
O. N. Walker T. Aydelette
W. W. Rodgers, Jr.
J. B. Bateman
R. F. Schmidt
C. E. Schmidt

GREENVILLE TEXTILE SUPPLY CO. (212G)
504 Rhett St., Greenville, S. C.

A manufacturer's representative.

IRA L. GRIFFIN & SONS (501C)
P. O. Box 1576, Charlotte, N. C.

A manufacturer's representative.

Representatives at booth:
I. L. Griffin, Sr.
I. L. Griffin, Jr.
W. A. Griffin

GULF OIL CORP. (211G)
719 Gulf Bldg., Pittsburgh, Pa.

Features oils and lubricants.

Representatives at booth:
A. O. Buntin E. T. Hughes
J. H. Hooten W. A. Dotterer
A. M. Wright C. T. Timmons
W. L. Camp S. E. Owen, Jr.
K. A. Yetter C. J. Cason
S. W. Dance L. A. Bethea
F. D. Jones W. C. Causey
O. K. Weatherwax
R. G. Burkhalter
G. W. Burkhalter
C. E. Reese, Jr.

HARTFORD MACHINE SCREW CO. (106A)
Hartford, Conn.

Features spinning, twisting, and filling spindles.

Representatives at booth:
A. R. Andrews A. M. Newell
A. E. Winslow L. K. Dodd
N. D. Kennedy

HATCHER SALES CO. (835F)
542 Forrest Rd., N. E., Atlanta, Ga.

Features Stanley door operators. Improved door controls and operators will be on display.

Representatives at booth:
C. K. Nichols A. H. Hill
J. R. Tlanda T. L. Bobbitt
F. M. Hatcher J. T. Cobb

HAYES INDUSTRIES, INC. (813F)
Jackson, Mich.

Features aluminum textile beams.

Representative at booth:
W. H. Maxson

SEE how NEW OAKITE materials cut maintenance cleaning costs

at Booth 339 *— Southern Textile Show*

CLEANING TENTER CHAINS: Oakite Composition No. 92, medium-duty detergent, applied with an Oakite Solution-Lifting Steam Gun quickly and thoroughly removes all soils. Helps minimize cloth contamination, gets better work from chains. Saves time because chains can be completely cleaned in place.

DYE KETTLE CLEANING is simplified by applying Oakite Composition No. 22 with an Oakite Solution-Lifting Steam Gun, pairing speedy detergency with thoroughness to remove all signs of scum and soil.

REMOVING SIZE FROM EQUIPMENT: Troublesome sizing is loosened in short soaking time and suspended in solution, leaving surfaces completely clean, by using Oakite Composition No. 22.

DESCALING HUMIDIFIER SPRAYS: Oakite Compound No. 32, the acidic descalant, scientifically inhibited against attack on metal, thoroughly removes lime scale by dissolving it. Good on nozzles, tanks, return lines—whenever lime scale exists. Also excellent as a rust remover.

REMOVING SLIME FROM SCREENS: Humidifier screens do better work when thoroughly cleaned in quick-penetrating Oakite Composition No. 22. Slime and dirt are thoroughly removed, metal undamaged. Use it also to deslime humidifier tanks, lines.

REMOVING OIL, GREASE FROM EQUIPMENT is fast and thorough with Oakite Composition No. 99 or Oakite Composition No. 12. Efficient operation, less soil removal in finishing processes assured. Fast-working emulsion type detergent, mixable with water, is safe, economical, easy to use. High flash point.

CLEANING PLASTIC SPOOLS, sprockets, spiders and other plastic parts: Oakite Composition No. 63 or Oakite Compound No. 84-M is recommended for this work, choice depending on the kind of deposits to be removed. Both provide fast, safe cleaning action.

REMOVING RUST FROM STEEL REEDS may be done thoroughly and safely with Oakite Compound No. 31. Specially designed material quickly removes rust, light oil and grease.

CLEANING BEFORE REBUILDING MOTORS: Oakite Stripper M-3 removes paint and varnish from coils, windings and cases by soaking. Stator housings, terminals and other parts are easily cleaned in Oakite Composition No. 116. Both detergents are fast working and thorough.

PREVENTING RUST from developing on unprotected surfaces of big or little parts is simplified by applying Oakite Special Protective Oil. It leaves a thin, transparent coating that locks out indoor rust. No pre-drying necessary.

CLEANING ALUMINUM HOSIERY BOARDS may be done without hurting the polished surfaces by using Oakite Composition No. 64. Specialized material has good cleaning and free rinsing qualities, is easy to apply and economical to use.

CONTROL OF SLIME & SCALE IN HUMIDIFIERS and air conditioning units may be accomplished easily by adding Oakite Airefiner No. 52 to the water. This water conditioner stops troublesome slime and scale, helps prevent dry-air damage, gets better service from equipment. May be added to water automatically with Oakite Regulator (provided free.)

FLOOR CLEANING can be greatly simplified by using Oakite Penetrant or Oakite Composition No. 20 to remove grease, starch, lint, size and other soils. Specially designed detergents quickly break the soil binder, rinse off freely, leave surface clean. Materials work effectively used manually or in power scrubbers.

DRY-CLEANING FLOORS: Oakite Composition No. 71, absorbent granular material, soaks up liquids, oils and greases, keeps working areas clean, non-slippery, fire-safe. The material is merely sprinkled around spinning and weaving machinery and swept up.

CLEANING BIG EQUIPMENT before repair or repaint is made much easier by applying Oakite Composition No. 92 or other recommended Oakite material with an Oakite Solution-Lifting Steam Gun. Heat, mechanical force and detergency speedily remove soils, eliminate manual scrubbing.

SEE these NEW Oakite Materials on display at Booth 339

SEE startling demonstration of NEW safety-solvent cleaner . . . Oakite No. 116. Small electric motor, completely immersed in Oakite No. 116 solution, continues to operate SAFELY at full speed. Don't miss it!

SEE Oakite Rustripper, NEW alkaline de-rusting compound. Oakite Rustripper is especially recommended for removing rust from drop wires where hydrogen embrittlement must be avoided. Has no fumes. No special equipment needed.

SEE NEW water-mixed Oakite No. 12, designed to give you utmost protection against fire hazard when cleaning spinning frames, harness, reeds, Jacquard heads, cork rolls, aluminum nylon thread holders, etc.

OAKITE PRODUCTS, INC.

Manufacturers of Specialized Industrial Cleaning Materials

General Offices: 42 Rector St., New York 6, N. Y.
Technical Service Representatives Located in All Principal Cities of the United States and Canada

REG. U. S. PAT. OFF.

In Canada: Oakite Products of Canada Ltd., 65 Front St. E., Tor., Ont.: 1 Van Horne Ave., Mont.; 550 Beatty Street, Vancouver, B. C.

HERR MFG. CO., INC. (262G)
318 Franklin St., Buffalo 2, N. Y.
Features flyers and conical rings. A new lightweight flyer for twisting light-denier yarns will be shown.
Representatives at booth:
H. B. Atwood R. M. Leach
C. M. Kitzmiller
W. W. Woodard

JOHN HETHERINGTON & SONS, INC. (602E)
N. Marietta St., Ext., Gastonia, N. C.
Features card-room supplies.
Representatives at booth:
J. Knoblock J. Brookshire

HILLYARD CHEMICAL CO. (304H)
St. Joseph, Mo.
Features floor treatments and labor-saving floor-maintenance methods. Scrubbing, polishing, steel-wooling machines and equipment; seals; finishes; cleaners; waxes; gymnasium-floor treatments and conditioners will be among the products shown.
Representatives at booth:
W. A. Schmaltz R. L. Jones

HOLLISTER-MORELAND CO., INC. (230G)
Spartanburg, S. C.
A manufacturer's representative.
Representatives at booth:
R. B. Moreland
O. S. Bachelor
J. B. Moreland
L. C. Burris
J. C. Frankel
W. M. Baker
J. Washburn
H. Duke

R. E. L. HOLT, JR., & ASSOCIATES (813F)
Greensboro, N. C.
A manufacturer's representative.
Representatives at booth:
R. E. L. Holt, Jr.
D. R. Sellars J. B. Adams
F. A. New C. A. McAbee
J. G. Skinner W. B. Dunson

HOPE WEBBING CO., INC. (212G)
Providence, R. I.
Representative at booth:
H. S. Smith

HOWARD BROS. MFG. CO. (245G)
44 & 46 Vine St., Worcester, Mass.
Features card clothing, napper clothing, brush clothing, hand stripping cards, and hand sampling cards.
Representatives at booth:
C. A. Haynes T. J. Jackson
E. J. Lawrence H. Suggs
B. D. Hodges, Jr.

HUBINGER CO. (501C)
601 Main St., Keokuk, Iowa
Features pearl starch, thin boiling starch, waxy R gum, and Printex.
Representatives at booth:
G. R. Underwood
J. E. Boyle J. R. Myers
C. F. Merritt

HUNT LOOM & MACHINE WORKS, INC. (129A)
200 Academy St., Greenville, S. C.
Features looms, spreaders, motor drives, and loom parts.
Representatives at booth:
C. L. Still B. Whitmire
J. C. Galloway

HUNTER CONTROLS, INC. (709D)
North Adams, Mass.
Features electric psychrometer and hygrometers.
Representatives at booth:
J. H. Hunter K. Zirwes
H. Eicken

JAMES HUNTER MACHINE CO. (709D)
North Adams, Mass.

HUNTINGTON & GUERRY ELECTRIC CO. (216G)
230 Buist Ave., Greenville, S. C.
Features a reception booth.

HYATT BEARINGS DIV., GENERAL MOTORS CORP. (104A)
4th St., Harrison, N. J.
Features roller bearings.
Representatives at booth:
E. P. O'Neill
E. Maurushat
P. H. Hutchinson
G. B. Baxley
C. C. Wardell

HYSTER CO. (467B)
Danville, Ill.
Features lift trucks.
Representatives at booth:
J. W. Morgan P. E. Wrenn
J. N. Rector G. Wrenn
J. P. Wrenn

IDEAL INDUSTRIES, INC. (238G)
Bessemer City, N. C.
Features high-speed drawing frames, a high-speed ball-bearing fibre coiler mechanism, sliver spoons, change-overs, new conversions of lap back drawing frames, and new development in full can knockoffs and yardage counters.
Representatives at booth:
J. R. Whitehurst
E. B. Robinson
F. B. McDonald
A. S. Roebuck
E. F. Robinson

IDEAL MACHINE SHOPS, INC. (238G)
Bessemer City, N. C.
Features roving-frame spindles; finishes for roving-frame flyers; rebuilding services; pressers; throwing, spinning and twister spindles; and top rolls.
Representatives at booth:
J. R. Whitehurst
E. B. Robinson
F. B. McDonald
A. S. Roebuck
E. F. Robinson

KARL H. INDERFURTH CO. (833F)
1816 Liberty Life Bldg., Charlotte, N. C.
A manufacturer's representative.
Representatives at booth:
K. H. Inderfurth
J. F. Veach

INDUSTRIAL COATINGS, INC. (213aG)
Greenville, S. C.

INTERNATIONAL BUSINESS MACHINES CORP. (449B)
590 Madison Ave., New York, N. Y.
Features electric punched-card accounting machines, electric typewriters, and electric time equipment.
Representatives at booth:
T. E. Clemmons M. J. Gorrie
J. G. Darracott J. H. Temple

INTERNATIONAL CORRESPONDENCE SCHOOLS (227aG)
1001 Wyoming Ave., Scranton, Pa.
Features industrial-training programs for executives and management, training in foremanship, job relations, and textile manufacturing, finishing, and printing.
Representatives at booth:
U. E. Akins J. Stearns
R. Sutton W. F. Eckard
A. R. LaMontagne
G. E. McClenaghan

JENKINS BROS. (435B)
100 Park Ave., New York, N. Y.
Features bronze, iron, carbon-steel, and stainless-steel valves. New bronze regrinding valves will also be shown.
Representatives at booth:
E. C. Barret E. L. Dean
L. M. Leaptrott A. M. Street
W. A. Snellgrove
L. B. McClary

JOHNSON CORP. (455B)
Three Rivers, Mich.
Features pipe-supported, rod-supported, and self-supporting rotary pressure joints; syphon elbows; and a solenoid-operated valve.
Representatives at booth:
W. R. Monroe J. L. Reed
T. O. Monroe T. H. Abbey
R. W. Gotschall
W. T. Harding, Jr.
J. Q. Marshall
A. B. Shepherd

S. C. JOHNSON & SON, INC. (360H)
Racine, Wis.
Features heavy-duty floor-maintenance products, including waxes, sealers, cleaners, and machines.
Representatives at booth:
T. L. Fitzgerald
W. F. Smith
F. J. Kelly
W. T. Hall

KEEVER STARCH CO (407B)
1200 S. C. National Bank Bldg., Greenville, S. C.
Features a reception booth.
Representatives at booth:
J. F. Kurtz L. J. Castile
A. S. Fulford W. H. Frick
C. C. Switzer W. P. Hope
F. M. Wallace J. C. Long
E. H. Reynolds

KENNETT EQUIPMENT & MACHINERY CO. (335aH)
Kennett Square, Pa.
Features materials-handling equipment.
Representatives at booth:
C. H. McKaig
M. C. Seldomridge

KEYSTONE LUBRICATING CO. (402B)
21st & Clearfield Sts., Philadelphia, Pa.
Features lubricants and a device for the application of liquid grease through an oil hole.
Representatives at booth:
B. N. Melsom E. C. Barber
R. J. McGee W. F. Boger
R. M. Goss

WALTER KIDDE & CO., INC. (261G)
675 Main St., Belleville, N. J.
Features tension control and roller ball, compensator and warp stop motion, a double-disk compensator, a standard compensator, and a cord compensator.
Representatives at booth:
F. H. Muller D. Kroll
E. L. Herbert

KIRKMAN & DIXON MACHINERY CO. (235G)
Greenwood, S. C.
Features a tandem-unit waste machine and a waste hopper-feeder.
Representatives at booth:
I. W. Dixon C. M. Dixon
W. J. Langley

LAMBETH ROPE CORP. (221aG)
Kings Mountain, N. C.
Features spinning and twister tapes, narrow fabrics, hook bands for spinning and twisting, and cotton rope.
Representatives at booth:
J. P. O'Leary W. M. Rast, Jr.
S. E. Campbell F. Burke

LAMSON MOBILIFT CORP. (842F)
1113 Spring St., N. W., Atlanta, Ga.
Features fork-lift trucks and a model of a conveyor system.
Representatives at booth:
F. Mayse H. Sweet
J. B. Ellor J. T. Atchley
C. R. Johnson K. Pond
J. L. Morgan J. Pond
E. Cowan A. L. Lyons
F. Whittington
E. H. Woodberry
C. H. Packham

W. T. LANE & BROS., INC. (212G)
Poughkeepsie, N. Y.
Features canvas baskets and trucks.
Representative at booth:
J. M. Baker

LENKOTEX CO., INC. (840F)
136 Liberty St., New York, N. Y.
Features roller-bearing spindles, antifriction top rolls, high-draft units, a roller-bearing comb box, fluted and knurled rolls, flyers, spindles, and parts, and self-oiling rings for spinning and twisting.
Representatives at booth:
E. Stiehl J. R. Caldwell
V. Lindner S. R. Hogg
J. C. Martin W. Coleman
E. D. Meadows
G. P. Stanley

LESTERSHIRE SPOOL & MFG. CO. (212G)
Johnson City, N. Y.

LINCOLN ENGINEERING CO. (510C)
5701 Natural Bridge Ave., St. Louis, Mo.
Features automatic centralized-lubrication systems.
Representatives at booth:
J. Benskin
E. Byington
J. Bradley

LINDLY & CO. (833F)
Mineola, N. Y.
Features an automatic inspection machine.
Representatives at booth:
H. Lindemann
V. E. Lynch
D. Mindheim

H. F. LIVERMORE CORP. (109aB)
21 Linden St., Boston, Mass.
Features loom parts.
Representatives at booth:
S. O. Dodge
L. G. Urquhart
E. W. Fanning
C. E. Moore
W. T. Jordan
J. B. Kilpatrick

LIVINGSTONE COATING CORP. (320H)
709 W. Third St., Charlotte, N. C.
Features pin plates, fans, dry can, size box, slasher rolls, fluorescent reflectors, color tub, filling grates, and louvres, all coated with plastic.
Representatives at booth:
J. S. Livingstone
Mrs. B. J. Livingstone
G. L. Brooks

1,250,000 SPINDLES WITH

. . . . more and more mills completely modernizing their frames, improving yarn quality and increasing profits with ROBERTS equipment.* Thoroughly time-tested, this scientifically designed drafting system produces finer, stronger yarns at reduced costs.

ROBERTS

. . .. is the only manufacturer of complete drafting systems including "No-Oil" cap bars and saddles. A staff of textile engineers and skilled technicians supervise the installation and periodically inspect all Roberts equipment with prompt, dependable service.

HIGH-DRAFT CHANGE-OVERS

. . . save time, labor and money because they

1. Produce higher break factors and better yarn evenness.
2. Eliminate top roll oiling and reduce roll picking.
3. Provide better running work and reduced ends down.
4. Reduce roving processes and permit higher front roll speeds.

*** ROBERTS Gets 260,000 Spindle Change-Overs**

One of the nation's leading mills has just placed an order for ROBERTS High-Draft Change - Overs for more than 260,000 spindles—the largest single order for this type of equipment ever placed.

Talk to our salesman for complete details at your convenience—or see us at—

BOOTH 125
SOUTHERN TEXTILE EXPOSITION
October 4-8

ROBERTS COMPANY
Sanford, North Carolina, U. S. A.

LOUDEN MACHINERY CO. (704D)
607 W. Broadway, Fairfield, Iowa

Features a new twin-fan ceiling cleaner and a projected view of the Louden monorail in operation.

Representatives at booth:
W. Mayer, J. Kirkman, A. M. Rinehart, H. Black, B. Gamble, R. Berry, T. J. Pollard, C. Easley, S. C. Ebbert, O. M. Jones

MACBETH DAYLIGHTING CORP. (834F)
P. O. Box 950, Newburgh, N. Y.

Features an Executive daylight lamp for supervisory color checking; an industrial daylight lamp for dyehouse color matching; a disk colorimeter for color specification and color standards; a Junior Model cotton colorimeter; pH meters.

Representatives at booth:
N. Macbeth, M. Powell, W. B. Reese, M. D. Strong, E. F. Slaughter

CHR. MANN (840F)
Waldshut/Baden, West Germany

MANTON-GAULIN MFG. CO., INC. (504C)
44 Garden St., Everett, Mass.

Features the Gaulin textile homogenizer. An automatic pressure controller and a single-stage textile valve assembly will be shown for the first time.

Representatives at booth:
W. A. Hewitt, D. G. Colony, L. H. Rees, G. W. Eldridge

MARCHANT CALCULATORS, INC. (347H)
Oakland, Calif.

Features calculators.

Representatives at booth:
A. T. Davis, A. C. Sims, R. B. Pollock, J. S. Bradbury, R. C. Windsor, D. D. Study, R. F. Weems, R. G. Deemer, F. W. Grotophrost

MARQUETTE METAL PRODUCTS CO. (260G)
1145 Galewood Dr., Cleveland, Ohio

Features roller-bearing spindles.

Representatives at booth:
C. E. Miller, W. P. Russell, C. H. White, W. J. Howell

MARSH STENCIL MACHINE CO. (353H)
Belleville, Ill.

Features marking supplies, including a new taper, stencil machines, and electric gum med-tape machines.

Representatives at booth:
J. C. Shelton, E. J. Marsh, T. L. Langerfelt, J. Krause, J. A. Pierce, J. D. Attaway, Jr.

MARSHALL & WILLIAMS CORP. (255G)
Providence, R. I.

Features tenterette and guiding equipment.

Representatives at booth:
R. Viall, A. Marshall, J. C. Nash, E. E. Ford, F. Land, L. V. Neese, J. Love

MASURY-YOUNG CO. (337H)
76 Roland St., Boston, Mass.

Features floor-sealing and floor-cleaning compounds, fiber lubricants, nylon-processing compounds, and fiber and fabric finishes.

Representatives at booth:
L. W. Dee, F. R. Rody, J. A. Watson, L. L. Gallemore

McBEE CO. (329H)
295 Madison Ave., New York, N. Y.

Features methods for warp planning, quality-control production reports, control of stores and finished goods inventory, labor distribution and production reporting, payroll writing, maintenance control, and other clerical and production functions.

Representatives at booth:
R. M. Reynolds, R. D. Elf, F. W. Patterson, M. F. Merritt, L. P. Corley, G. H. Duncan, W. J. Bentley, C. S. Turner, C. W. Miller, T. E. Stanley, B. A. Evans, L. B. Walton, R. C. McCormick, S. C. Appleby

McKIERNAN-TERRY CORP. (824F)
Dover, N. J.

MECHANICAL HANDLING SYSTEMS, INC. (469B)
4600 Nancy Ave., Detroit, Mich.

MEC-TRIC CONTROL CO. (608E)
113 S. Brevard St., Charlotte, N. C.

Features liquid-level controls, steam traps, process valves, manifold and control valves, thermometers, meters, manometers, safety and relief valves, pressure gauges, solenoid valves, gauge columns, and a bimetallic steam trap.

Representatives at booth:
W. B. Simons, Sr., W. B. Simons, Jr., J. R. Nisbet

MEDLEY MFG. CO., INC. (836F)
400 32nd St., Columbus, Ga.

Features a drawing frame, an adjustable-gauge twister frame, spinning conversion, precision rolls, and an electromagnetic doffer-comb drive.

Representatives at booth:
L. H. Morrison, T. W. Hill, J. A. Bradshaw, C. E. Hett, M. W. Waldrop, J. C. Whitehurst

MEESE, INC. (314H)
Madison, Ind.

Features canvas doff baskets and canvas roving trucks.

Representatives at booth:
E. W. Meese, W. E. Petway

MERROW MACHINE CO. (230G)
2803 Laurel St., Hartford, Conn.

MINNESOTA MINING & MFG. CO. (445B)
900 Fauquier Ave., St. Paul, Minn.

Features tapes, dispensers, and nonslip surfacing.

Representatives at booth:
J. V. Garrett, B. C. Brown, J. H. Mellon, J. J. Bennison, W. F. Rhodes, F. L. Hayes, C. H. Hardman, L. M. Berlin, R. L. Hannegan, R. D. Scattergood

MITCHELL-BISSELL CO. (813F)
Trenton, N. J.

Features porcelain wire thread guides.

Representative at booth:
J. Mitchell

MODERN TEXTILES (122A)
303 Fifth Ave., New York, N. Y.

Features a textile publication.

MOFFATT BEARINGS CO. (240G)
1640 Fairmount Ave., Philadelphia, Pa.

Features for the first time a split roller-bearing unit, a complete antifriction-bearing service, and mounted units in both ball and roller types.

Representatives at booth:
O. S. Livingstone, D. G. Hornbaker, B. M. Ivey, A. Q. Davis, S. D. Zeanah, W. B. Osborne, R. W. Vogelsberg, R. Milford

MONA INDUSTRIES, INC. (802F)
65-75 E. 23rd St., Paterson, N. J.

Features a cold-water yarn-conditioning machine.

Representatives at booth:
W. O. Schlimbach, K. Heyman, R. H. Sommer

MONROE CALCULATING MACHINE CO., INC. (343H)
555 Mitchell St., Orange, N. J.

Features calculating, adding, and accounting machines. A new 10-key adding machine will be on display.

Representatives at booth:
B. T. Burry, J. F. Whitten, W. R. Corbin, R. F. LaManna, R. M. Owens, S. P. Greer, D. C. Dailey, R. F. Keiling, H. L. Brantley, C. W. Biediger, R. W. Sasser, Jr.

MORTON SALT CO. (509C)
120 S. LaSalle St., Chicago, Ill.

Features brine makers. An improved stainless-steel brine maker and a new rock-salt brine maker will be included in the display.

Representatives at booth:
A. Dewey, J. Mullinax, C. Nadhern, E. Ravenel, S. Robbins, B. Neill, J. Culp, J. Drake, B. Cribb

MOUNT HOPE MACHINERY CO. (829F)
15 Fifth St., Taunton, Mass.

Features controlled expansion guide, free-wheeling expanders, Vari-Bow expanders, jig expanders, slack-selvage eliminators, precision guiders, stainless-steel swing guiders, overhead sheaves, tension squeezers, pot eyes, wheeling pot eyes, turn-around rolls, selvage uncurlers, continuous roll feeds, let-offs, open-width tension device, and a skewed weft straightener and a bowed weft straightener.

Representatives at booth:
J. D. Robertson, W. P. Murray, J. B. Hammett, J. J. Mowry, R. H. Foster, M. Powell, E. F. Slaughter, J. F. Slaughter, M. D. Strong, D. V. Guillemette

NATIONAL CASH REGISTER CO. (363H)
Main & K Sts., Dayton, Ohio

Features accounting, adding, and billing machines.

Representative at booth:
D. J. Nelson

NATIONAL RING TRAVELER CO. (213G)
354 Pine St., Pawtucket, R. I.

Features ring travelers for spinning and twisting.

Representatives at booth:
F. L. Chase, L. E. Taylor, T. H. Ballard, D. C. Creech, F. S. Beacham, D. R. Ivester, M. H. Cranford

NATIONAL STARCH PRODUCTS, INC. (439B)
270 Madison Ave., New York, N. Y.

Features starches and resins.

Representatives at booth:
J. Fitzgerald, I. Dowdee, F. Eastwood, H. Olsen, H. Smith, C. Dyer, D. Lassiter

NATIONAL VULCANIZED FIBRE CO., FIBRE SPECIALTY DIV. (473B)
Wilmington, Del.

Features trucks, boxes, trays, roving cans, and barrels.

Representatives at booth:
E. M. Perry, W. B. Plowden, F. I. Crow, D. E. Williams, R. A. Craig, L. Matthews, R. G. Henderson

NEW YORK BELTING & PACKING CO. (212G)
Atlanta, Ga.

NEW YORK & NEW JERSEY LUBRICANT CO. (109A)
292 Madison Ave., New York, N. Y.

Features lubricants.

Representatives at booth:
J. H. Bennis, A. M. Cowan, I. L. Hall, F. W. Phillips, L. W. Thomason, F. W. Winecoff, J. A. Sorrells, Jr., R. F. Bagwell, Jr.

NORRIS BROS. (813F)
Greenville, S. C.

Features shuttles, picker sticks, and other wooden textile parts.

Representative at booth:
D. L. Norris, Jr.

NUTTING TRUCK & CASTER CO. (610E)
1125 W. Division St., Faribault, Minn.

OAKITE PRODUCTS, INC. (339H)
19 Rector St., New York, N. Y.

Features cleaning and descaling materials for equipment maintenance, air-conditioning water-treating materials, derusting materials, and cleaning equipment.

Representatives at booth:
R. E. Tschupp, W. H. Vaughn, S. L. Perkins, L. T. Prince, B. F. Swint, H. W. Kole, D. O. Mundale, L. W. Kagley, O. D. Riddle

ODELL MILL SUPPLY CO. (212G)
Greensboro, N. C.

A manufacturer's representative.

OHIO INJECTOR CO. (349H)
Wadsworth, Ohio

Features various types of valves, including a new union bonnet bronze gate valve, a new lubricated plug valve, and a redesigned forged-steel gate valve.

Representatives at booth:
P. J. Gallagher, L. G. Lackey, G. E. Taylor, P. E. Warner

OLD DOMINION BOX CO., INC. (301H)
528 Turner Ave., Charlotte, N. C.

Features set-up, folding, and corrugated boxes.

Representatives at booth:
W. B. Ray, M. A. Ballagh, C. W. Cochran, M. A. Peak

OLNEY PAINT CO (426B)
Spartanburg, S. C.

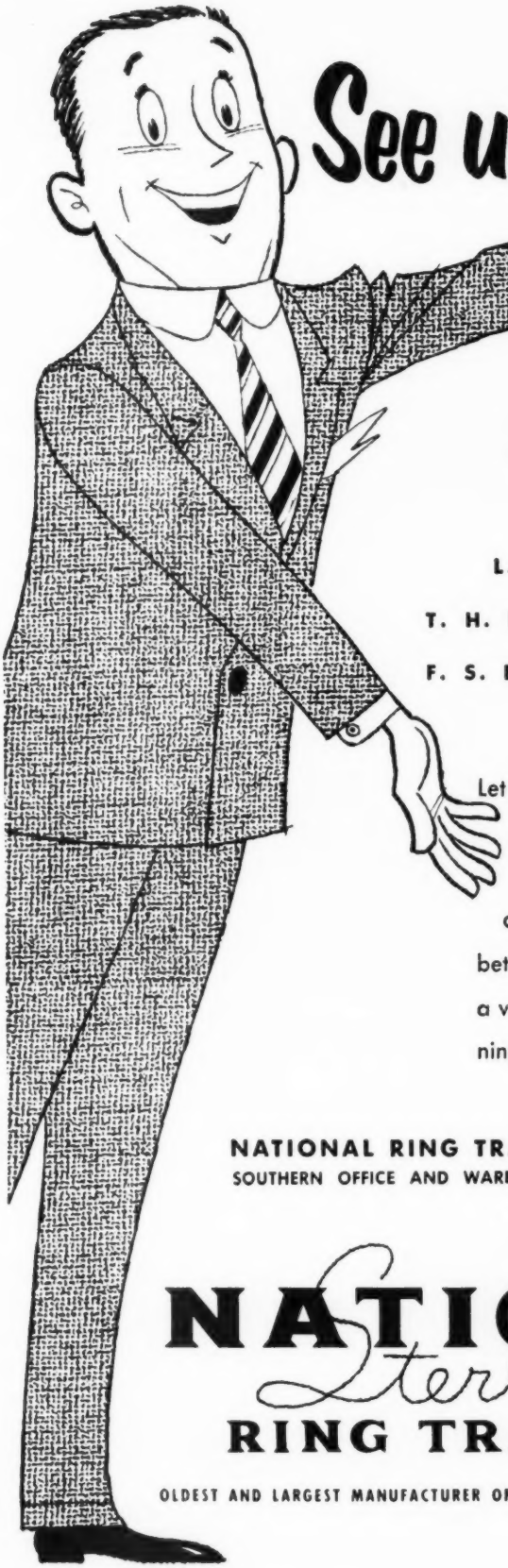
Features mill paints and brushes.

Representatives at booth:
R. Olney, W. P. Dobson, J. M. Isom, C. H. Dobson

ORR FELT & BLANKET CO. (116A)
Piqua, Ohio

Features slasher and clearer cloth.

Representatives at booth:
O. D. Landis, M. B. Orr, F. Antley



See us at Booth 213 at Greenville

L. E. TAYLOR, Southern Manager

T. H. BALLARD — M. H. CRANFORD

F. S. BEACHAM — D. C. CREECH

Let these men show you our complete line of spinning and twisting travelers — steel and bronze — including both patented, and standard travelers. Let them explain what our new, larger warehouse in Charlotte means to you in better and quicker service. Here, we have always available a very complete stock of ring travelers for twisting and spinning all natural and synthetic fibres.

NATIONAL RING TRAVELER CO. AND STERLING DIVISION
SOUTHERN OFFICE AND WAREHOUSE: 1215 EAST FOURTH STREET, CHARLOTTE, N. C.

Tels. Charlotte 2-5542 / 7-4352

NATIONAL Sterling RING TRAVELERS

NATIONAL RING TRAVELER CO. PAWT. R.I. U.S.A.

OLDEST AND LARGEST MANUFACTURER OF RING SPINNING AND TWISTING TRAVELERS IN THE UNITED STATES

J. C. PADDOCK CO. (442B)
S. Church St. Ext.,
Spartanburg, S. C.

Features hand trucks.

Representative at booth:
S. E. Mabry

PAGE-MADDEN CO. (833F)
Mineola, N. Y.

Features guide wires, porcelain guides, and alumina-oxide guides.

Representative at booth:
J. F. Madden

PARKS & WOOLSON MACHINE CO. (232G)
Springfield, Vt.

Features finishing machinery. A new high-speed vertical napper will be on display.

Representatives at booth:
S. W. Hall R. F. Hadley

PAVIA SHUTTLE CO. (813F)
Allentown, Pa.

Features shuttles.

Representatives at booth:
H. Pavia

PENICK & FORD LTD. (433B)
420 Lexington Ave., New York, N. Y.

Features gums and finishing gums.

Representatives at booth:
D. P. O'Connor W. J. Kirby
H. A. Horan T. H. Nelson
L. G. Wear R. H. Pharr
M. C. Borden G. C. Henry
W. R. Brown D. F. Lowry
J. H. Almand
G. L. Morrison
G. M. Anderson

PERFECTING SERVICE CO. (409B)
322 Atando Ave., Charlotte, N. C.

Features a revolving steam joint, a Universal steam trap, compressed air-control equipment, and flexible metal hose.

Representatives at booth:
W. G. Rencer
A. J. DeMeyer W. G. McNinch

PERMACEL TAPE CORP. (334H)
New Brunswick, N. J.

Features Permacel and Texcel pressure-sensitive tapes and dispensers

Representatives at booth:
G. A. Fitzgerald A. M. Lynch
J. S. DeNoia
G. P. Whitman, Jr.
D. W. McClain
J. H. Tourtman
H. E. Barton

PIONEER HEDDLE & REED CO., INC. (212G)
Atlanta, Ga.

Features loom equipment, including frames, heddles, reeds, and accessories. New Draw-Rite heddles and frames will be included in the display.

Representatives at booth:
M. W. Mayes C. B. Elliott
J. C. Alexander E. LeClair
A. V. McAlister R. J. Payne
G. B. Thompson R. N. Suhr

PITTSBURGH CORNING CORP. (201G)
1 Gateway Center, Pittsburgh, Pa.

Features glass blocks and Foamglas insulation.

Representatives at booth:
P. D. Japp R. T. Thomas
W. H. Polk H. C. Kelly
A. I. Holmes E. J. Barnell

POE HARDWARE & SUPPLY CO. (110aB)
Box 1940, Greenville, S. C.

A manufacturer's representative.

Representatives at booth:
T. Henderson
C. Poe T. Stone

POWER TRANSMISSION CO. (308H)
P. O. Box 1148, High Point, N. C.

Features fluid drives for textile machinery. A new hydraulic loom let-off, variable-speed V-belt sheaves, and other power-transmission equipment will be on display.

Representatives at booth:
W. S. Cross G. Sechrest
J. H. Chambers

PRECISION GEAR & MACHINE CO. (136A)
2001 N. Tryon St., Charlotte, N. C.

PROCTOR & SCHWARTZ, INC. (247G)
7th St. & Tabor Rd.,
Philadelphia, Pa.

Features photographs and information on the hot-air slasher, Con-O-Matic washer, Con-O-Roll washer, loop dryer and curer, loop ager, tenter housings, continuous-bleach system, continuous open-width steamer, multipass air-lay dryer, Redman process equipment, Adams oscillator, blending equipment, carding and preparatory equipment, batt-making equipment, and Tekja-process equipment.

Representatives at booth:
J. R. Schenck S. Javian
J. P. Christ H. B. Riehl
T. A. Mahan J. H. Senior
W. H. Poole
A. G. Blank
W. A. Dickinson
D. D. Cunningham
C. W. Schwartz, IV

PURE OIL CO. (514C)
P. O. Box 2607,
Charlotte, N. C.

Features petroleum products pertaining to textile lubrication and four new textile lubricants.

Representatives at booth:
B. W. Parsons
F. G. Sholes
L. C. Hollingsworth

PURITAN CHEMICAL CO. (423B)
916 Ashby St., N. W., Atlanta, Ga.

Features industrial chemicals.

Representatives at booth:
T. V. Fisher E. P. Collins
C. E. Braun H. Collinson

RAGAN RING CO. (105A)
901 S. Main St., East Point, Ga.

Features spinning and twister rings.

Representatives at booth:
R. Ragan A. H. Harris
J. H. Foard J. Johnson
H. B. Askew W. S. Johnstone

RAMSET FASTENERS, INC. (324H)
12,117 Berea Rd., Cleveland, Ohio

Features power-actuated tools and fasteners.

Representatives at booth:
R. E. Mullis G. H. Pennell
J. M. Buchanan

RAPIDS-STANDARD CO., INC. (603E)
130 Trowbridge, N. W.,
Grand Rapids, Mich.

Features casters.

Representatives at booth:
K. P. Denisty
W. Williams
R. L. Warwick
A. Jones

REEVES PULLEY CO. (253G)
Columbus, Ind.

Features variable-speed drives and controls. Among the new equipment that will be shown are a Vari-Spin drive, a fractional-horsepower Vari-Speed drive, and a Vari-Speed motor pulley.

Representatives at booth:
F. Higgins P. B. Talhat
J. White J. G. Reeder
M. R. Snyder W. J. Reeves
J. B. Thomas

ROBERT REINER, INC. (138A)
550-64 Gregory Ave.,
Weehawken, N. J.

Features a heavy-duty beamer, a sectional warper with a yarn-storage device and an oiling device, and a magazine-creel section with package and tension application.

Representatives at booth:
A. Schoenenberg J. Klinck
G. Moebius

RELIANCE ELECTRIC & ENGINEERING CO. (144A)
1088 Ivanhoe Rd., Cleveland, Ohio

Features adjustable-speed drives, a.c. motors, a floating gear motor, a spinning-frame motor, and an electronic regulator.

Representatives at booth:
E. G. Orahood F. G. Auch
R. T. Willard K. F. Ertell
F. W. Leitner R. L. Custis
L. E. Blackwell J. A. Wright
C. D. Wright
A. J. Stockslager
C. E. Robinson
R. W. Chapman

RICE DOBBY CHAIN CO. (813F)
Millbury, Mass.

Features canvas lug straps, wire-core dobby cords, and pattern-chain bars.

Representative at booth:
W. B. Harris

RIDGE TOOL CO. (458B)
400 Clark St., Elyria, Ohio

Features pipe tools, pipe machines, threading machines, and extractors. New pipe- and bolt-threading machines will be shown.

Representatives at booth:
R. D. Frye R. Hamlin
P. Williams L. Parcel

ROBERTS CO. (125A)
P. O. Box 931, Sanford, N. C.

Features high-draft spinning-frame change-overs and spinning-frame creels. New no-oil cap bars and saddles and high-draft cradles will be shown.

Representatives at booth:
R. E. Pomeranz F. Walker
R. Padgett G. Cater
C. Oliver

E. F. ROSE & CO. (211aG)
Maiden, N. C.

Features wooden textile clearers, top clearers, clearer boards, plush-covered scavenger rolls, and clearer cloth cots.

Representatives at booth:
E. F. Rose W. Rose
B. Rose

ROSS BUILDERS SUPPLIES, INC., ENGINEERED SALES DIV. (355H)
227 Pendleton St., Greenville, S. C.

Features steel shelving and bins for machinery parts, steel lockers, and electric door operators. A new panel-type movable partition with aluminum accessories will be shown.

Representatives at booth:
H. E. Langston J. F. Solas
J. H. Latham

ROTHERM ENGINEERING CO., INC. (306H)
7280 W. Devon Ave., Chicago, Ill.

Features a new expansion joint. Revolving joints and air cylinders used in connection with flexible joints will also be shown.

Representatives at booth:
H. S. Kuhn H. D. Hohm

B. S. ROY & SON CO. (207G)
Linwood at Second Ave.,
Gastonia, N. C.

Features a hardened-head cradle, a ball-bearing cylinder grinder, an internal ball-bearing card-clothing grinder, a high-speed drum-roll grinder for top flats, and a steel-edged burnisher and stripper roll.

Representatives at booth:
W. P. Cooper L. F. Frye

RUTI MACHINERY WORKS LTD. (605E)
Ruti/Zurich, Switzerland

Features a high-speed one-shuttle automatic cotton loom, a high-speed one-shuttle automatic loom for fine-denier rayon fabrics and cotton goods, and a high-production one-shuttle automatic loom.

Representatives at booth:
A. H. Deucher E. Boelsterli
C. A. Kennedy E. Botta
E. W. Schmiedel

SARCO CO., INC. (416B)
350 Fifth Ave., New York, N. Y.

Features a draining and air-venting system for drying cylinders, steam traps, balanced-pressure thermostatic air vents, and dyeing and finishing equipment.

Representatives at booth:
A. Milnes M. J. Marion
R. H. Johnson, Sr.
R. H. Johnson, Jr.

W. SCHLAFHORST & CO. (427xE)
M. Gladbach, Germany

Features a fully automatic high-speed quiller that will be shown for the first time in this country.

Representatives at booth:
Dr. Walter Reimers
H. Deussen

SCOTT TESTERS, INC. (401B)
101 Blackstone St., Providence, R. I.

Features the incline-plane Serigraph, the Clemson flat-bundle fiber tester, and a tensile tester equipped with a new electronic weighing system.

Representatives at booth:
J. Hargreaves John Klinck
D. C. Scott, Jr.

SELIG CO. (225G)
336-350 Marietta St., Atlanta, Ga.

Features floor-maintenance materials, cleaning compounds, degreasing compounds, hand cleaners and lotion, disinfectants, and deodorants.

Representatives at booth:
A. Hamburger M. Doctor
W. F. Bode B. Wooten
C. Pearl B. Hyatt
L. Strasburger A. Schwab
C. Vickery S. Hall

SEYDEL-WOOLLEY & CO. (234G)
748 Rice St., N. W., Atlanta, Ga.

Features the Niagara twist-setting and yarn-conditioning machine and the Seyco warp lubricator.

Representatives at booth:
V. Woolley W. H. Cutts
J. R. Seydel R. P. Anthony
P. V. Seydel V. R. Mills
D. Meriwether F. de Loach
A. W. LaGrone R. P. Anthony
W. L. Whisnant

SHEFFIELD CORP. (229G)
721 Springfield St., Dayton, Ohio

Features the Micronaire, the Neptel, and a dye-package permeability tester.

Representatives at booth:
P. Wichelhaus N. Jeglum
A. Goldberg W. I. Wilt
N. Emmons W. F. Aller

SHELL OIL CO. (820F)
50 W. 50th St., New York, N. Y.

Features industrial lubricants, including textile and machine oils.

Representatives at booth:
K. H. Nonweiler P. W. Godard
T. J. Klement G. J. Bowen
R. C. Higginbothan

SIGNODE STEEL STRAPPING CO. (805F)
2600 Northwestern Ave., Chicago, Ill.

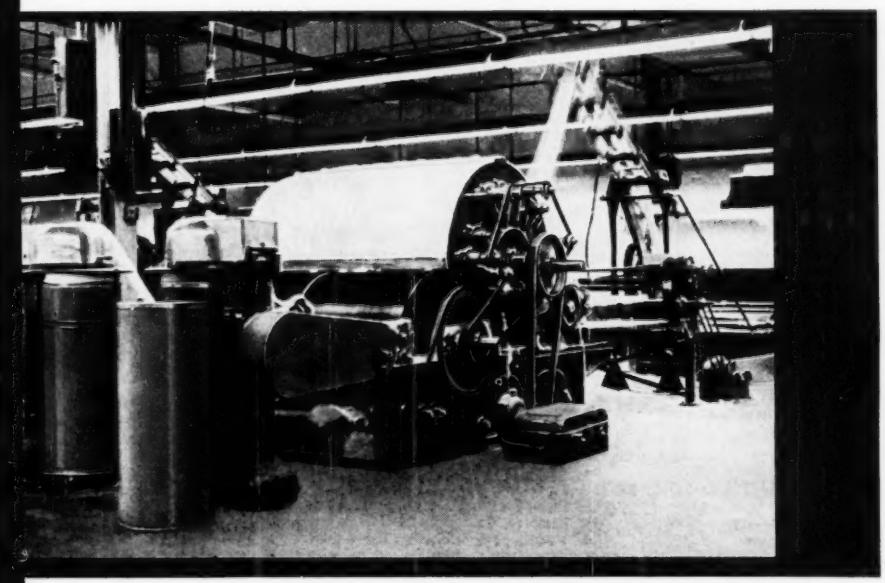
Features steel-strapping tools and machines.

Representatives at booth:
M. C. Carlson C. E. Talbutt
S. Brown J. Elsinger
M. W. Jones R. Chapman
J. R. Williams D. Davis
D. B. Shelton

CARDING

number one of a series depicting

MORE AND BETTER TEXTILE PRODUCTION WITH HYATTS



Proctor & Schwartz Model 670 Breaker Card and Model 671 Finisher equipped with HYATT Roller Bearings at Chatham Mfg. Co., Elkin, N. C.

The problem of producing uniform sliver is easily overcome when cylinder, doffer and lickerin settings are accurately maintained. The application of HYATT Roller Bearings—*expertly engineered for each specific duty*—is the most efficient method of maintaining these critical settings. You're always sure of highly uniform carding—smoother rotation of workers and strippers—*more and better textile production with HYATTS*!

VISIT OUR BOOTH AT 18TH SOUTHERN TEXTILE EXPOSITION, OCT. 4 – OCT. 8, TEXTILE HALL, GREENVILLE, S.C.

For further details on the profitable application of HYATT Roller Bearings to textile machinery, request Bulletin T-54 from Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT

STRAIGHT BARREL TAPER

ROLLER BEARINGS

SINCLAIR REFINING CO. (103A)
630 Fifth Ave., New York, N. Y.

J. E. SIRRINE CO. (205G)
Greenville, S. C.
Features a reception booth.
Representatives at booth:
A. D. Asbury, A. Bedell, R. R. Adams, G. Wrigley, G. Morgan, H. Swannell, H. S. Forrester, J. W. Cantrell, G. Wrigley, Jr., J. Bringhurst, M. Stokeley, B. Bozeman, G. Gaskin, G. F. Patterson, H. Frederick, H. McDonald, J. T. Mallard, G. Cumbus, L. Burdette, C. Hatch, C. T. Wise, F. Dean, O. Going, A. Cox

SKF INDUSTRIES, INC. (511C)
Front St. & Erie Ave., Philadelphia, Pa.
Features roller-bearing spindles, ball-bearing top rolls, double-row ball-bearing tension pulleys, pendulum weighting arms, pillow blocks, and standard ball and roller bearings.
Representatives at booth:
F. J. Matte, B. K. Lathbury, W. C. Sessions, J. T. Paradise, D. B. Eden, K. Warberg

SLIP-NOT BELTING CORP. (358H)
Kingsport, Tenn.
Features leather belting, checkstraps, box plate and binder leathers, and harness strapping.
Representatives at booth:
O. Cox, M. Bell, E. Meservey, J. Youngblood, T. Doane, O. L. Carter

JAMES SMITH & SON, INC. (227G)
982 Southbridge St., Worcester, Mass.

SMITHCRAFT LIGHTING DIV., A. L. SMITH IRON CO. (212G)
501 Oak Grove Dr., Charlotte, N. C
Representative at booth:
H. H. Bothwell

SNAP-ON-TOOLS CORP. (328H)
915 S. Clarkson St., Charlotte, N. C.
Features hand tools and maintenance tools.
Representatives at booth:
J. M. George, Jr.
W. L. Burke

B. SNOWISS FUR CO. (813F)
Lock Haven, Pa.
Features shuttle fur.
Representative at booth:
B. Snowiss

SONOCO PRODUCTS CO. (241G)
Hartsville, S. C.
Features paper and fibre cones, tubes, cores, bobbins, and spools; cork and ameroid cots; new plastic single-head spools.
Representatives at booth:
C. H. Campbell, W. H. Miller, G. K. Lewis, J. K. Taylor, W. B. Broadbent, W. M. Carpenter, W. K. Lewis, Jr., W. R. Peacock, J. A. Reagan, Jr., P. F. Williams, A. L. Carter, L. H. Stokes, H. Campbell, B. F. Biggs, J. D. Watford

SOUTHEASTERN SAFETY APPLIANCE CO. (346H)
1010 Crescent Ave., N. E., Atlanta, Ga.
Features fire extinguishers, breathing equipment, oxygen equipment, industrial first-aid supplies, and industrial eye protection. A new dry-chemical automatic fire extinguisher will be on display.
Representatives at booth:
G. D. Johnson, W. E. Beddingfield, P. H. Ellington

SOUTHERN BELTING CO.
236 Forsyth St., S. W., Atlanta, Ga.
Features leather belting and textile strapping.
Representatives at booth:
J. C. Hycock, S. C. Smith, A. P. Mauldin, I. Dickinson

SOUTHERN LOOM DEVELOPMENT CO. (517C)
2222 Augusta St., Greenville, S. C.
Features a modified, rebuilt loom that will demonstrate the features of a new loom that will be made next year.
Representatives at booth:
J. D. Hunt, G. K. Washburn, J. R. Abbott, F. E. Hooper, T. G. Johnson

SOUTHERN STATES EQUIPMENT CORP. (244G)
Hampton, Ga.
Features can coilers for cards, can conversions for cards, can conversions for drawing, individual card drives, aluminum comb stock with solid blade support, a ball-bearing comb box, and ball-bearing lickerin units.
Representatives at booth:
C. W. Walter, R. D. Carmichael, W. A. Knapp, C. H. Kennington, J. C. Walters

SOUTHERN TEXTILE NEWS (325H)
Piedmont Bldg., Charlotte, N. C.
Features a textile publication.

SOUTHERN WEAVING CO. (813F)
Greenville, S. C.
Features thin spinning tapes.
Representative at booth:
F. Minich

SPENCE ENGINEERING CO. (608E)
Walden, N. Y.
Features pilot-operated pressure- and temperature-control valves, pump governors, liquid-level control valves, heaters, and back-pressure valves.
Representatives at booth:
W. B. Simons, Sr., W. B. Simons, Jr., J. R. Nisbet

SPINTEX SPINNEREIMASCHINENBAU G.m.b.H. (840F)
Murrhardt/Wurttemberg, West Germany
Features high-drafting units for roving and ring spinning frames, spindles with SKF roller bearings, fluted rollers, separators, thread-guide attachments, and comb-box aggregates for carding machines.
Representatives at booth:
E. Stiehl, G. Rossberg, V. Lindner

SQUARE D CO. (807F)
6060 Rivard St., Detroit, Mich.
Features a control-center section, roving-frame starter, loom switch, combination starter, card control, shipper rod, safety switches, power distributing panel, standard motor control, a new air valve, and a new safety switch.
Representatives at booth:
E. Love, W. H. Younger, C. R. Whitney, S. C. Hunt, R. C. Quick, J. D. Rambo, D. Farmer

A. E. STALEY MFG. CO. (412B)
Decatur, Ill.
Features starches, dextrins, sizing, and finishes.
Representatives at booth:
W. N. Dulaney, L. A. Dillon, H. H. Ector, C. H. Garren, N. N. Harte, Jr., L. J. McCall, H. A. Mitchell, W. T. O'Steen

STANLEY WORKS, STEEL STRAPPING DIV. (832F)
410 Candler Bldg., Atlanta, Ga.

STEEL HEDDLE MFG. CO. (137A)
2100 W. Allegheny Ave., Philadelphia, Pa.
Features weaving equipment, warp-preparation equipment, bobbins, and chrome-plated items. New equipment to be shown includes twister and take-up bobbins, picker sticks, and Drawtex frame improvements.
Representatives at booth:
H. W. Fehr, F. Kaufmann, A. Kieny, J. Kaufmann, J. Long, H. Goodwin, J. B. Bowen, D. Batson, S. Zimmerman, Jr., B. D. Pritchett, D. Macintyre, C. Caine, J. Neuffer, H. Cash, D. Stevens, R. Parker, D. Culp, J. Jacobs

STEELE CANVAS BASKET CO., INC. (326H)
199 Concord Turnpike, Cambridge, Mass.
Features steel-frame canvas baskets, trucks, and hampers.
Representative at booth:
A. E. Pratley

STEIN, HALL & CO., INC. (462B)
285 Madison Ave., New York, N. Y.
Features starches, dextrins, gums, resins, and materials for sizing, printing, and finishing.
Representatives at booth:
E. Stein, L. F. Costello, F. W. Perry, E. D. Estes, D. E. Truax, W. S. Gilbert, E. P. Lavoie, R. E. Staples, W. B. Amos

STELLITE AMERICAN CORP. (710D)
60 E. 42nd St., New York, N. Y.
A manufacturers' representative.
Representatives at booth:
V. Saxl, H. Berberich, H. P. Levy

STERLING ENGINEERING & MFG. CO. (215bG)
173 Gilligan St., Wilkes-Barre, Pa.
Features self-stacking boards, aluminum quill boards, self-stacking tube boards, and yarn-handling trucks.
Representative at booth:
G. McGee

SUNRAY CO. (821F)
Camp Croft, Spartanburg, S. C.
Features materials-handling equipment. An all-steel keyseating machine and a portable elevating-dumping machine will be on display.
Representatives at booth:
E. J. Eaddy, H. O. Coddington, C. L. Brown

SUPERIOR BOLSTER CO. (323aH)
Box 1040, Gastonia, N. C.

SYKES FOUNDRY & MACHINE CO., INC. (827F)
Maple Ave., Burlington, N. C.
Features a cloth-grading and -inspecting machine and a new air guide.
Representatives at booth:
K. C. Sykes, S. B. King, Jr., A. R. Miles, W. P. Younger

SYLVANIA ELECTRIC PRODUCTS, INC. (356H)
60 Boston St., Salem, Mass.
Features industrial fixtures and incandescent and fluorescent lamps.
Representatives at booth:
G. D. Rand, P. P. Harrison, R. C. Marshall, Jr., H. R. McClellan, J. A. Keller, C. C. Beyer

W. O. & M. W. TALCOTT, INC. (406B)
91 Sabin St., Providence, R. I.
Features belt fasteners.
Representative at booth:
M. W. Talcott

TAYLOR INSTRUMENT COS. (428B)
Rochester, N. Y.
Features control and measurement instrumentation for dye padders and for beam and package dyeing. Instruments include flow recorders and controllers, process timers, liquid-level controllers, recorders, temperature and pressure gauges, and industrial thermometers.
Representatives at booth:
H. G. Olson, A. J. Fleig, W. C. Gray, H. M. Messenger, L. H. VanHuben, H. M. Barker, J. Barker, R. S. Peterson

G. H. TENNANT CO. (143A)
2530 N. 2nd St., Minneapolis, Minn.
Features floor-maintenance and allied equipment. Improved floor-treating materials for hardening and protecting hardwood and concrete floor surfaces will be included in the display.
Representatives at booth:
R. F. Guthrie, O. C. Hognander, G. D. Billings, H. A. Duncan, W. M. Thompson, W. M. Bostwick, E. K. Hardy, L. W. Shores

THE TEXAS CO. (421B)
135 E. 42nd St., New York, N. Y.
Features textile lubricants and processing oils.
Representatives at booth:
A. C. Keiser, Jr., W. P. Warner, C. F. Walker, E. M. Edwards, F. G. Mitchell, L. C. Mitchum, J. B. Hatfield, F. A. Boykin, W. P. Camp, C. L. Adams, D. C. Rand

TEXIZE CHEMICALS, INC. (411B)
P. O. Box 1820, Greenville, S. C.
Features sizing products, including tallows, waxes, and compounds.
Representatives at booth:
W. J. Greer, W. N. Kline, Jr., C. M. Chalmers, J. A. McNeill, C. Campbell, J. H. McGee

Over-the-road handling by the Ross Carrier

Gulf Compress Company*

Increases Hauling Rate 200%

No waiting time at the dock—he drops the load and away he goes!

The carrier does double-duty as a trash truck.

with 4 ROSS Carriers

Prior to owning Ross Carriers, cotton was transported 2½ miles by a tractor-trailer system from the Gulf Compress Company's warehouse to ships waiting at a loading dock. Because a round-trip took over an hour and a half, and a capacity load was only 66 bales, the Gulf Compress management knew improved handling methods had to be found. Ross Carriers were their answer.

Each one, equipped with special load hooks, can handle 15 bales and complete a trip to the docks in 15 minutes . . . an increase in the hauling rate of more than 200%! The problem of equipment flexibility has been solved, too. Carriers don't stand idle while cotton loads are made up . . . and when there is no cotton to move, the carriers do double-duty by acting as disposal units. With a specially constructed box, they roam the company's 26 acres picking up cut weeds, trash and other potential fire hazards. It takes only 5 seconds for one man to load a carrier . . . 3 seconds to unload.

Why not call your local Clark dealer, listed under "Trucks, Industrial" in the Yellow Pages, and ask him how the Ross Carrier can cut your handling costs.

*Gulf Compress Company—Corpus Christi, Texas.

CLARK® EQUIPMENT

ROSS CARRIER DIVISION
CLARK EQUIPMENT COMPANY
Benton Harbor 27, Michigan

See Clark at the Southern Textile Exposition

 For more information, write direct or use Reader Service post card.

TEXTILE AGE, INC. (120A)
22 W. Putnam Ave., Greenwich, Conn.
Features a textile publication.

TEXTILE BULLETIN (204G)
Charlotte, N. C.
Features a textile publication.

TEXTILE INDUSTRIES (408B)
806 Peachtree St., N. E., Atlanta, Ga.
Features a textile publicatfon.

THE TEXTILE SHOPS (113A)
Spartanburg, S. C.
Features stainless-steel size kettles, a 10-cylinder stainless-steel dryer with a V-belt drive, card screens, spinning cylinders, and Teflon-coated cylinders and rolls.
Representatives at booth:
J. E. Spivey
K. Selden L. Gregg
E. Morrison C. D. Schrader
M. Schrader T. L. Shealy

TEXTILE WORLD (222G)
201 E. Coffee St., Greenville, S. C.; 330 W. 42nd St., New York, N. Y.
Features a textile publication.
Representatives at booth:
E. D. Fowle
P. M. Thomas D. H. White
J. H. Kennedy R. B. Pressley
M. London R. W. Pinault
T. B. Winston J. H. Blore
W. B. Dall J. Ryan
W. G. Ashmore H. C. Harvey
M. C. MacKenzie A. W. Fisher
J. G. Sabella
R. L. Chisholm
J. C. White, Jr.

H. J. THEILER CORP. (828F)
22 Ashmont Ave., Whitinsville, Mass.
Features a Staubli dobby on a Benninger loom, a card punching machine, aluminum harness frames, and heddles and drop wires.
Representatives at booth:
H. J. Theiler O. Staubli
H. Badertscher M. A. Ruff

THREE-S-WORKS (840F)
Schwabach/Bavaria, West Germany

TOLEDO PIPE THREADING MACHINE CO. (146A)
1445 Summit St., Toledo, Ohio
Features pipe tools and power machines, including new power drive, pipe cutters, pipe vise, vise stand, and heavy-duty pipe wrenches.
Representatives at booth:
H. R. Strouse R. W. Warnke
H. F. McClellan

TOLEDO SCALE CO. (444C)
Toledo, Ohio
Features industrial weighing equipment.
Representatives at booth:
M. W. Mengel E. B. Heape
H. B. Sanford W. S. Heape
G. H. Webb
D. E. Armstrong
W. F. MacKinnon

TON-TEX CORP. (813F)
Englewood, N. J.
Features spinner belting and fabric loom strapping.
Representative at booth:
T. Lombardi

TOWMOTOR CORP. (825F)
1226 E. 152nd St., Cleveland, Ohio
Features lift trucks and accessories.
Representatives at booth:
A. H. Roth J. T. Dover
R. Aiken L. H. Fallis
W. S. Murphey

TURNER MFG. CO. (322H)
Statesville, N. C.

TWEEDALES & SMALLEY (1920) Ltd. (601E)
Castleton, Rochdale, Lancashire, England
Features opening machinery for cotton, including the No. 6 hopper opener and the Shirley opener.
Representatives at booth:
G. H. Lawes D. Hatton

UNION BAG & PAPER CORP. (366H)
233 Broadway, New York, N. Y.
Features containers for the textile industry.
Representatives at booth:
J. W. Butler J. Hough
R. C. Day T. J. Fahey
F. P. Grimes

UNISTRUT PRODUCTS CO. (708D)
1013 W. Washington Blvd., Chicago, Ill.
Features all-purpose adjustable metal framing for building racks, shelving, and partitions.
Representative at booth:
C. T. Walas

UNITED MOTORS SERVICE DIV., GENERAL MOTORS CORP. (110bB)
Detroit, Mich.

U S BOBBIN & SHUTTLE CO. (817F)
135 Bradford St., Lawrence, Mass.
Features warper beams.
Representatives at booth:
C. D. Brooks J. Locke
G. L. MacKinnon R. L. Carroll

U. S. RING TRAVELER CO. (309H)
159 Aborn St., Providence, R. I.
Features travelers.
Representatives at booth:
H. R. Fisher W. H. Rose
O. B. Land W. P. Vaughan

U. S. TEXTILE MACHINE CO. (121bA)
Scranton, Pa.
Features a reception booth.
Representatives at booth:
A. W. Thomas, Jr.
F. C. Nave

UNITED STATES STEEL CORP., AMERICAN STEEL & WIRE DIV., (611E)
Cyclone Fence Dept.
P. O. Box 1458, Savannah, Ga.

UNITED STATES SUPPLY CO. (302H)
888 Broadway, East Providence, R. I.
Features a stainless-steel scray, a stainless-steel back dryer, padder, and an automatic cut-off batcher.
Representatives at booth:
H. E. Whitaker
V. A. Jones
G. A. Howell

UNIVERSAL WINDING CO. (203G)
1005 W. Morehead St., Charlotte, N. C.

VEEDER-ROOT, INC. (107A)
70 Sargeant St., Hartford, Conn.
Features pick counters, cut meters, hank counters, predetermined counters, magnetic counters, worm-driven yardage counters, and the Vary-Tally.
Representatives at booth:
G. L. Logan F. J. Swords
T. Nesson R. C. Conant
H. E. Mansfield

VICTOR RING TRAVELER CO. (224G)
20 Mathewson St., Providence, R. I.
Features a reception booth.
Representatives at booth:
E. R. Jerome W. L. Hudson
C. W. Wilbanks C. H. Green
W. T. Horton
F. P. Bodenheimer

WALWORTH CO. (809F)
60 E. 42nd St., New York, N. Y.

WATSON-WILLIAMS MFG. CO. (128A)
Millbury, Mass.
Features shuttles and shuttle parts.
Representatives at booth:
W. L. Watson
H. J. Watson
R. E. Norman
G. C. Burbank
S. M. Ebert
J. Wyatt
A. J. Bahan

WEST DISINFECTING CO. (352H)
1700 Altamont Ave., Richmond, Va.
Features floor cleaners, treatments, finishes, and waxes; disinfectants; insecticides; liquid soaps; paper towels; hand-cleansing materials; protective creams and garments; antiseptic floor treatment; iodine-based disinfectants.
Representatives at booth:
H. A. Leche, Jr. I. G. Riddick
T. St. Ledger O. P. Baird
H. W. Anderson

W. J. WESTAWAY CO. LTD. (605E)
Hamilton, Canada

WESTINGHOUSE ELECTRIC CORP. (464B)
P. O. Box 868, Pittsburgh, Pa.
Features motors, controls, lighting, and Micarta. Among the new equipment on display will be a cotton-card gear motor, NEMA rerated motors, a loom motor, and a d.c. braking controller for a.c. motors.
Representatives at booth:
A. W. Rose F. T. Benner
W. W. Ballew C. P. Walker
J. W. Rigdon J. H. Reeves
S. A. Bobe J. O. Buchanan
J. G. Stephenson

WESTINGHOUSE ELECTRIC CORP., LAMP DIV. (404C)
2260 Peachtree Industrial Blvd., Chamblee, Ga.
Features lamps.
Representatives at booth:
R. A. Corvey J. F. Baker
J. W. Johnston W. D. Baker
J. D. Mitchell

WESTON ELECTRICAL INSTRUMENT CORP. (707D)
614 Frelinghuysen Ave., Newark, N. J.
Features various types of testing equipment, including an analyzer, a miniature clamp volt-ammeter, a portable miniature d.c. recorder, and a miniature a.c. recorder, all recently developed.
Representatives at booth:
A. G. Koenig
J. A. Heacock
L. Van Blerkom
E. T. Oettinger

WEST POINT FOUNDRY & MACHINE CO. (837F)
West Point, Ga.
Features slashers, including a new three-stage slasher friction and a new slasher creel.
Representatives at booth:
T. J. Lane S. S. Rice
R. L. Mundhenk R. V. Lee
R. F. Guill

WHITIN MACHINE WORKS (257G)
Whitinsville, Mass.
Features repair parts, replacement parts, supplies, and change-over material.
Representatives at booth:
R. G. McKaig C. M. Banks
R. W. Rawlinson B. A. Brown
Z. C. Childers J. R. Federline
T. W. Winstanley B. C. Grieb

WHITINSVILLE SPINNING RING CO. (209G)
Whitinsville, Mass.
Features spinning and twister rings and accessories.
Representatives at booth:
W. P. Dutemple G. T. Brown
W. K. Shirley

EDWIN L. WIEGAND CO. (702D)
7500 Thomas Blvd., Pittsburgh, Pa.
Features Chromolox electric radiant panels.
Representatives at booth:
W. L. Thomson H. R. Miles
C. B. Rogers

WILL-MAT CORP. (126A)
831 N. Tryon St., Charlotte, N. C.
Features casters.
Representatives at booth:
J. T. Matthews
H. W. Wilkin
B. Carpenter
M. Creighton

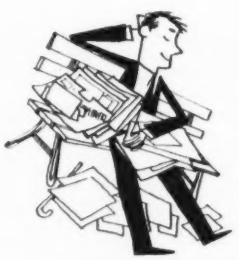
R. H. WOOD CO. (227G)
19th & Westmoreland Sts., Philadelphia 40, Pa.
Features Noble-comb circles, worsted aprons, textile pins, and miscellaneous combing equipment.
Representatives at booth:
H. G. Hood F. W. Hood
R. H. Hood, II
W. F. Gill

T. B. WOOD'S SONS CO. (228G)
Fifth Ave., Chambersburg, Pa.
Features power-transmission equipment, including new variable-speed drives and timing belt drives.
Representatives at booth:
C. O. Wood R. C. Reese
G. M. Henderson
E. L. Nuernberger
E. R. Kleinlein

WRENN BROS. (471B)
4701 Pineville Rd., Charlotte, N. C.
Features casters, trucks, conveyors, and lift trucks.
Representatives at booth:
J. P. Wrenn G. L. Wrenn
P. E. Wrenn D. Horswell

WRIGHT-BATCHELDER CORP. (331H)
10 High St., Boston, Mass.
Features Shepherd casters and patented nonbinding casters. New 4-in. metal-tread and 5-in. rubber-tread swivel and rigid casters will be included in the display.
Representatives at booth:
P. Cook H. A. Ford

YALE & TOWNE MFG. CO., YALE MATERIALS HANDLING DIV. (822F)
Roosevelt Blvd., Philadelphia, Pa.
Features industrial fork-lift trucks. A new 2,000-lb. gas fork-lift truck with fluid coupling will be on display.
Representatives at booth:
J. P. Coleman M. R. Hawley
E. A. Brigham
H. Ford



TENSION REGULATION PROBLEMS?

LEESONA®

UNIVERSAL WINDING CO.

SOLVES THEM WITH

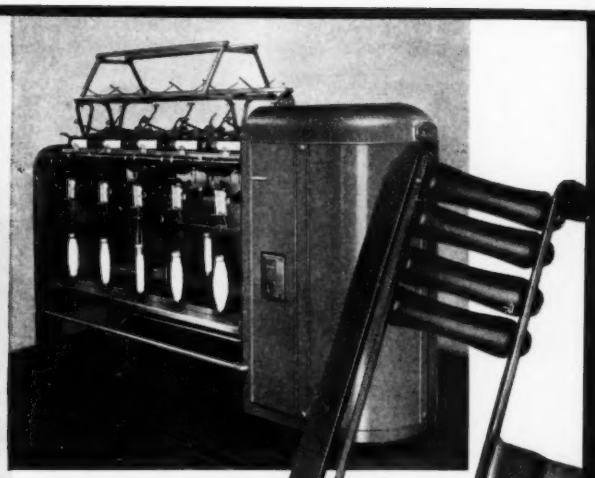
AlSiMag®

CONTROLLED FINISH GUIDES

Years of experience have convinced most manufacturers and processors of synthetic yarns that uniformity of tension is achieved in direct proportion to uniformity of finish of the tension guides. That's why so many textile machinery manufacturers have standardized on AlSiMag controlled finish guides for tension regulating mechanisms. Illustrated are gate tensions of Universal Winding Co. for two of their Redraw and Winding Machines—each employing AlSiMag 193 finger guides.

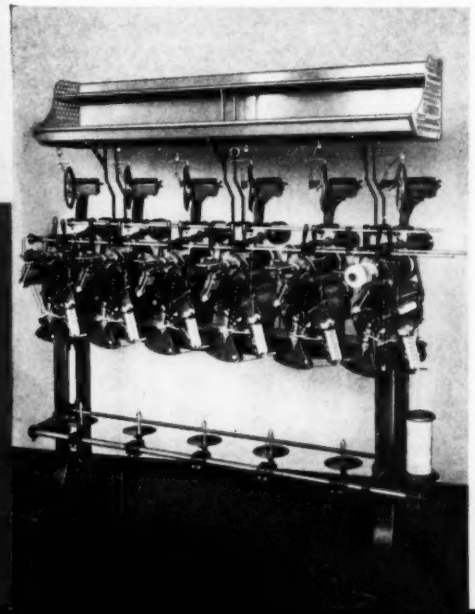
The controlled finish of AlSiMag guides is measured in micro inches, R. M. S., and can be reproduced to specification from lot to lot—year to year. By use of these guides, evenly wound packages of absolutely uniform density become a matter of routine. AlSiMag guides are hard, satin-smooth, long-lived—and never pick up or injure the most delicate yarns.

For perfectly regulated tensions and trouble-free processing, specify AlsiMag controlled finish guides.



(Above) TYPE 50-499A-7X GATE TENSION, used on the Universal Winding Co. Model 200 Redraw (which builds double flanged bobbins fast and accurately from any kind of synthetic filament yarn.) The AlSiMag 193 finger guides, Part No. GE-4558-A, are conductors of electricity and are useful for dissipating static charges.

(Left) TYPE 50-499A-3X GATE TENSION. AlSiMag 193 controlled finish finger guides, Part No. GE-4558-A, are utilized on this mechanism to regulate tensions on Universal's No. 50 Winding Machine (which builds a wide variety of precision wound packages of natural and synthetic yarns and is often described as "the most flexible winder made.")



85th YEAR OF CERAMIC LEADERSHIP

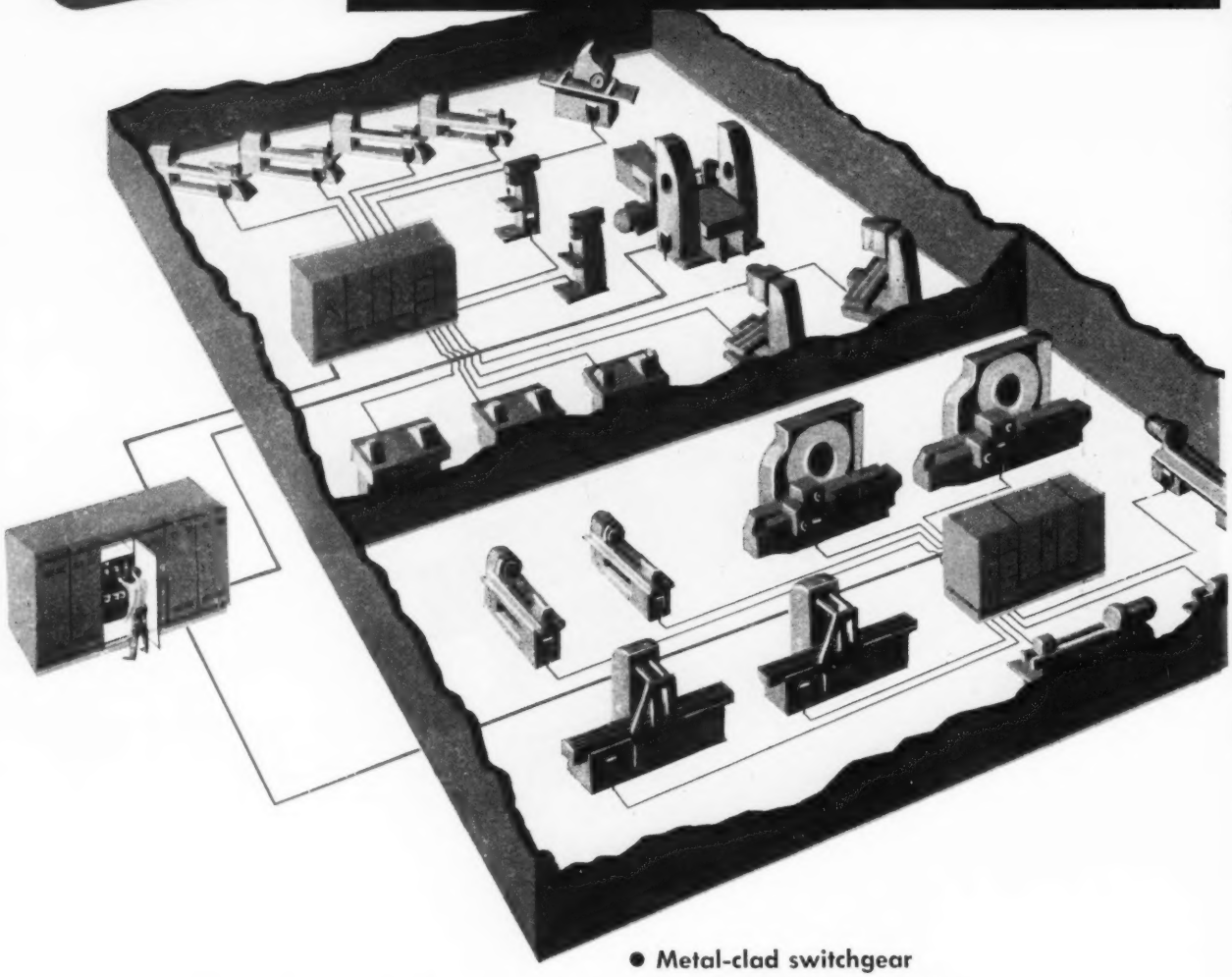
AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

ALLIS-CHALMERS

PROGRESS IN

Switchgear modernize



MODERN PLANTS USE these items of electrical distribution equipment.

- Metal-clad switchgear
- Load center unit substations
- Bus duct
- Individually enclosed breakers
- Low voltage switchgear
- Frame-mounted oil circuit breakers

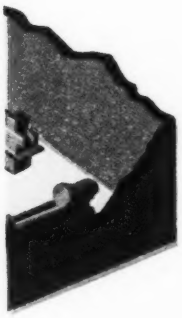
ALLIS-CHALMERS

For more information, write direct or use Reader Service post card.

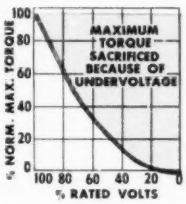
electrically

Cut Operating Costs 6 Ways – Improve your Distribution System With Allis-Chalmers Switchgear

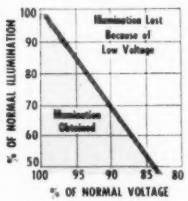
In many plants the electrical system grew piecemeal. New machines were added to existing feeders; long, low voltage feeders were added for new groups of machines — and the whole system became inefficient and even dangerous. If this is the case in your plant, here are some of the losses you can avoid by modernizing with Allis-Chalmers switchgear:



1 Torque loss — Torque and horsepower drop when voltage drops below rated voltage of motors. Jobs take longer, because reduced torque necessitates lighter cuts on machine tools. Major cause of undervoltage is long, low voltage feeders. Placing unit substations at load centers shortens low voltage cable . . . improves voltage.



2 Illumination loss — You get less lumens per dollar when voltage is low. In addition, most studies show workers see better, produce more when illumination level is high.



3 Production loss — Standard Allis-Chalmers switchgear designed to accommodate special circuit schemes that will assure uninterrupted power for automation or continuous processing.

4 Motor burnout — Individually enclosed low voltage circuit breakers at each machine protect motors from faults and from overloads that might cause burnouts . . . protects you from lengthy interrupted production.

5 Space loss — Compact Allis-Chalmers switchgear units fit anywhere. Use non-productive areas such as the roof, basement, balcony or space outside near the building.

6 Power loss — Old breakers in many plants are now inadequate to handle a short circuit because of increased system capacity since the time they were installed. A major fault could cause equipment failures and prolonged outages. If your plant is typical, any breaker over 10 years old is probably inadequate today, because of your increased use of power.

get more information

A-C ALLIS-CHALMERS

Allis-Chalmers switchgear engineers can help you solve your electrical distribution problems. Call your nearby A-C district office, or write for further information.

A-4248

Allis-Chalmers
Milwaukee 1, Wisconsin

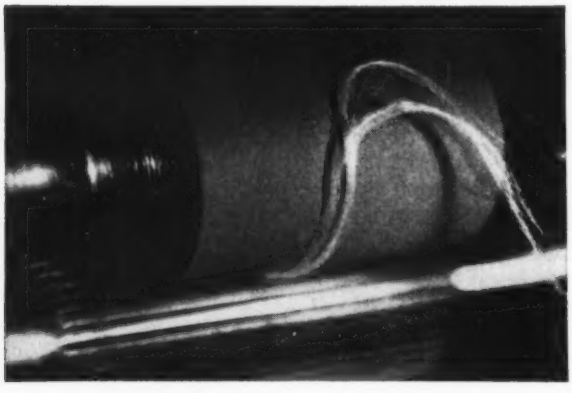
Send me new 24-page bulletin "Power at Load Centers Pays Off." (11B6285B)

Name .....
Title .....
Firm .....
Street .....
City ..... State .....

For more information, write direct or use Reader Service post card.

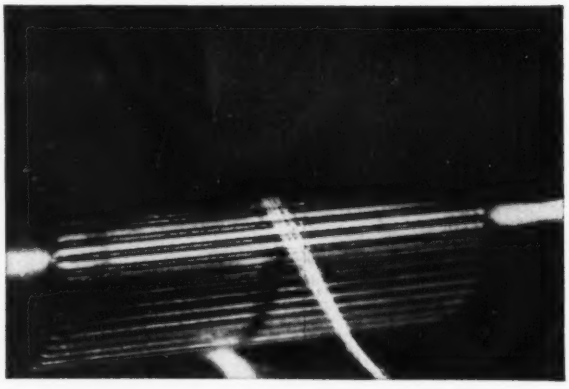
When spinning synthetics,

For spinning fine yarns, and for any count yarn with revolving clearers, J-490 Cots have proved ideal in many mills. Special electrolytes added to J-490's synthetic rubber composition make it highly lap resistant. If lapping's a problem, call your Armstrong man and arrange for a test of J-490 Cots.



THIS COT LAPS.

Moisture layers on fiber and cot contain electrical charges. When pressed together in spinning, these electrically charged moisture layers tend to adhere to each other. When an end breaks, this attraction is strong enough to hold the yarn and cause lapping.



THIS COT DOESN'T LAP.

Electrolytes incorporated in patented Accotex composition neutralize the electrical charge in the moisture layer on the cot. Therefore, there can be no attraction between the moisture layers and no tendency for the fiber to lap up onto the top roll.

use the cot with "built-in" lap resistance—Armstrong's J-490

Special rubber compound gives good yarn control, reduces broken ends, won't pull fiber from stock.

Spinning synthetics and blends with ordinary roll covers frequently causes difficulty because these covers pull fibers from the stock and are likely to cause excessive ends down and lapping.

Many mills have overcome these problems by switching to Armstrong's J-490 Accotex®, a roll covering designed to provide the high lap resistance required for spinning synthetic fibers and blends. J-490's long-wearing synthetic rubber compound contains certain electrolytes that actually tend to repel broken ends. You can see how this happens in the pictures at the left.

These new cots are smooth and clean running. They are unaffected by oils, dyes, or commonly used textile solvents. J-490 Cots contain no fillers that roughen their drafting surface—they will not pull fibers from stock, and they eliminate excessive end breakage.

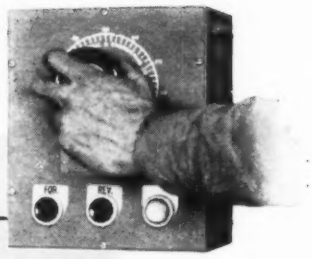
Like all Accotex Cots, J-490's will give good yarn control over long service periods and require only an occasional rebuffing to keep them spinning like new.

If lapping is a problem in your mill, try Armstrong's J-490 Cots. A quick test on your own frames will prove how easily and economically J-490 Cots can handle any synthetic fiber or blend.

Your Armstrong man will be glad to supply as many samples as you need for a test. Call him today or write Armstrong Cork Company, Industrial Division, 6509 Dauphin Street, Lancaster, Pennsylvania. J-490 Cots, and all other Armstrong textile mill supplies, are available for export.

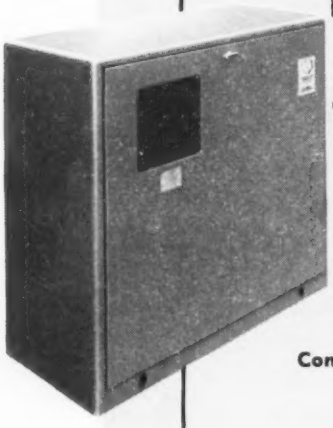
ARMSTRONG'S ACCOTEX COTS

Operator's
Control Station

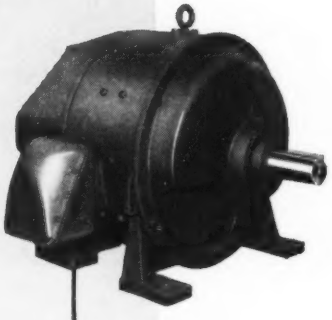


BUILT AND APPLIED BY RELIANCE

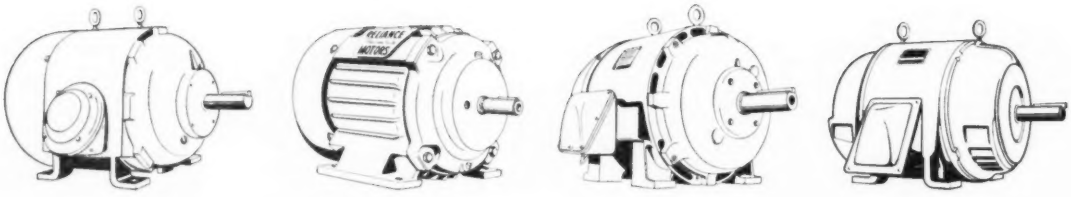
THESE *Tools of Automation* BOOST



Control Unit



Adjustable-Speed
Drive Motor



RELIANCE ELECTRIC AND ENGINEERING CO.

1086 Ivanhoe Road, Cleveland 10, Ohio • *Sales Representatives in Principal Cities*

RELIANCE Precision-Built MOTORS

RELIANCE V★S DRIVE ®

PRODUCTION EFFICIENCY IN EVERY INDUSTRY

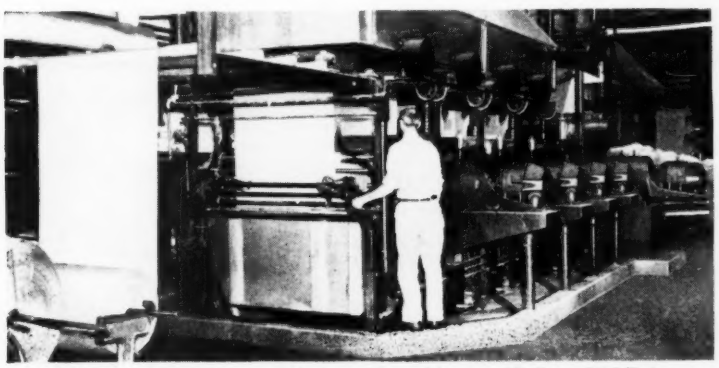
. . . Moving Everything from Textiles to Engine Blocks

at less cost

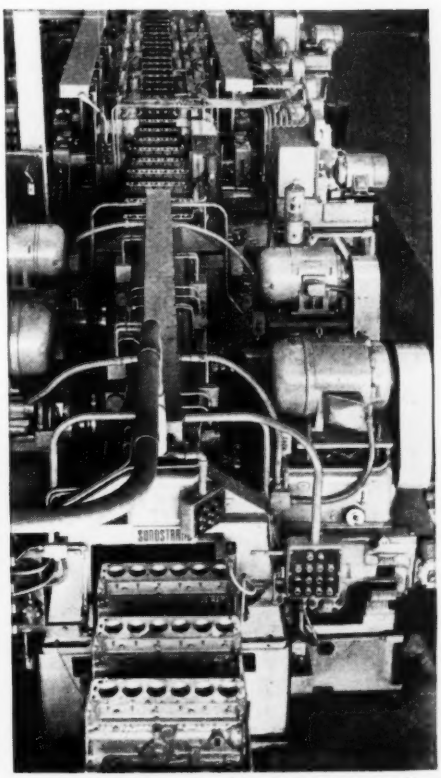
If you're looking around for ways to improve your profit ratio—then take a look at these Tools of Automation! They include Reliance motors, adjustable-speed drives, electronic controls, and applied engineering. They've made a lot of companies a lot more competitive.

They are used in the world's largest and most completely automated engine plant. And you will find them delivering outstanding performance on machinery in paper, steel, machine tool, textile—in fact, in every industry.

The nearly 50 years of practical, first-hand experience Reliance has in developing, building and applying the Tools of Automation are available to help you automate a single machine . . . a process . . . or a complete production line. For all the facts, write for our new booklet, "The Tools of Automation". A-1185



Efficiency of this textile range is increased by multi-motored Reliance V★S Drive.



Over 2,000 Reliance Precision-Built Motors deliver steady, unfailing power to speed engine castings automatically through 26 machine operations.

For more information, write direct or use Reader Service post card.

AT THE

SOUTHERN TEXTILE EXPOSITION

SKF to display 4 IMPORTANT NEW PRODUCTS

October 4-8 **Greenville, S. C.**

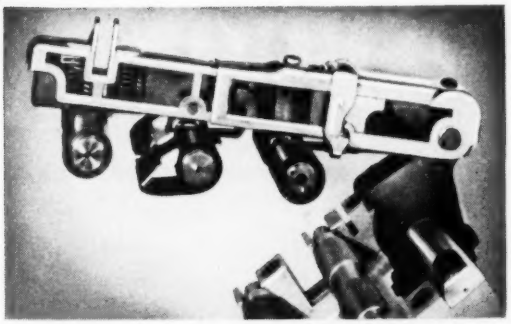
Booth 511

Once again, significant news is coming from SKF.

This time it's about four revolutionary SKF products for the textile industry.

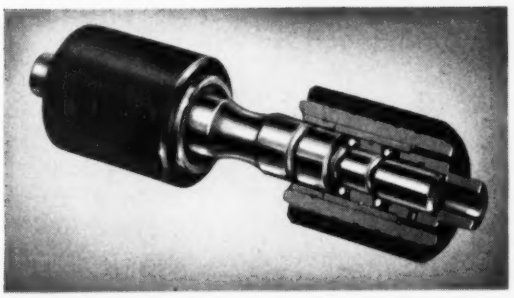
They are products which will help you improve the efficiency and economy of your mill operation. They are products which are attractively priced. They are products which are readily available.

They are products which you owe it to yourself to see when you visit the 18th Southern Textile Exposition!



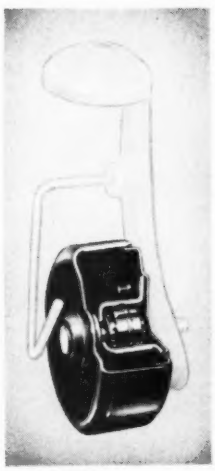
You'll see the SKF PENDULUM WEIGHTING ARM

Eliminates cap-bars, saddles, hooks and dead weights! Permits individual guidance of top rolls and insures parallel tracking with bottom steel rolls at all times. Each roll is weighted by its own coil spring, so that top rolls can be adjusted separately without affecting load distribution.



You'll see the SKF BALL BEARING TOP ROLL

Prevents oil from staining yarns. Delivers uniform drafting. Grease lubricated, requires re-lubrication only once every three years of three-shift, six-day week operation. Available for either pendulum or cap-bar guidance.



You'll see the SKF TENSION PULLEY

Tiltproof, double-row ball bearing. Bearing inner race rotation and stationary grease chamber gives this pulley greatly increased capacity over conventional types. All steel, dynamically balanced, Parkerized shell.

You'll see the SKF ROLLER BEARING SPINDLE

Spindles that usually save between 15% and 25% of power required by motors, tapes, belts, etc. The peak loads are reduced to a minimum . . . more uniform twist is obtained . . . and the yarn has a higher average breaking strength.

You'll see other SKF Bearings and the sand-blast-proof "SY" Pillow Block for textile mill applications, and be able to talk to SKF Field and Home Office Engineers who will tell you why SKF products can improve the efficiency and economy of your operations. Be sure to stop in.
SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
—manufacturers of **SKF** *and* HESS-BRIGHT® *bearings.*

7525

SKF®

TEXTILE BEARING SPECIALTIES

Exclusive "Tailored" Construction specify Dayton Thorobred

Outstanding performance by Dayton Thorobred Drop Box Pickers results from unique design and construction at vital points of impact

You'll get more low-cost hours of efficient loom operation with Dayton Thorobred Pickers scientifically designed and built in one piece to absorb maximum shock longer.

By varying the density of Dayton Thorobreds at the three points of contact, strains are neutralized in the picking area, are prevented from reaching other loom parts.

At the spindle contact, for example, a hard composition bearing material that requires no lubrication prevents the hole from becoming egg-shaped.

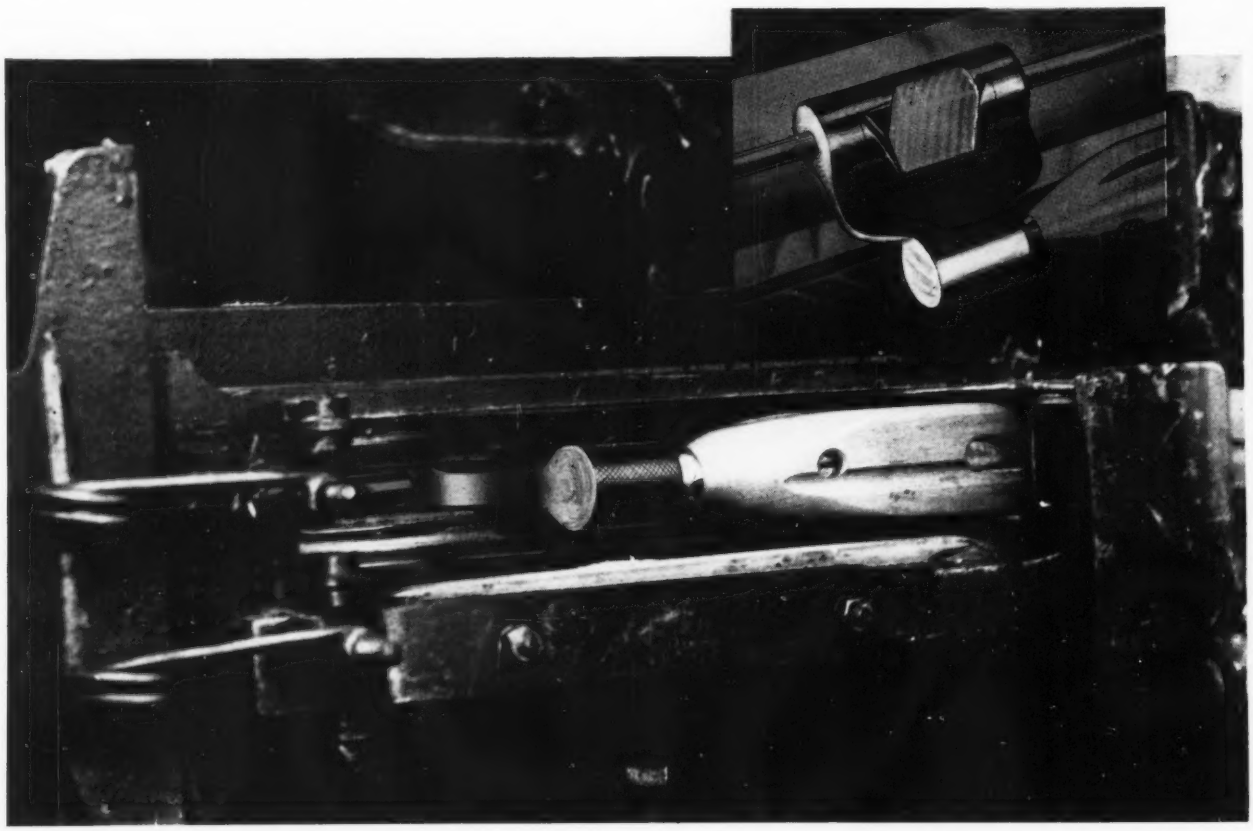
At the picker stick hole Dayton pickers have a softer composition which provides a cushion to absorb shock of impact and protect picker and picker stick alike.

The composition at point of shuttle contact is still softer to absorb the shock of shuttle receiving. This avoids shuttle point loosening, effects longer picker life.

3-Point "Controlled Density" Construction of Dayton Drop Box Pickers Saves Loom Wear

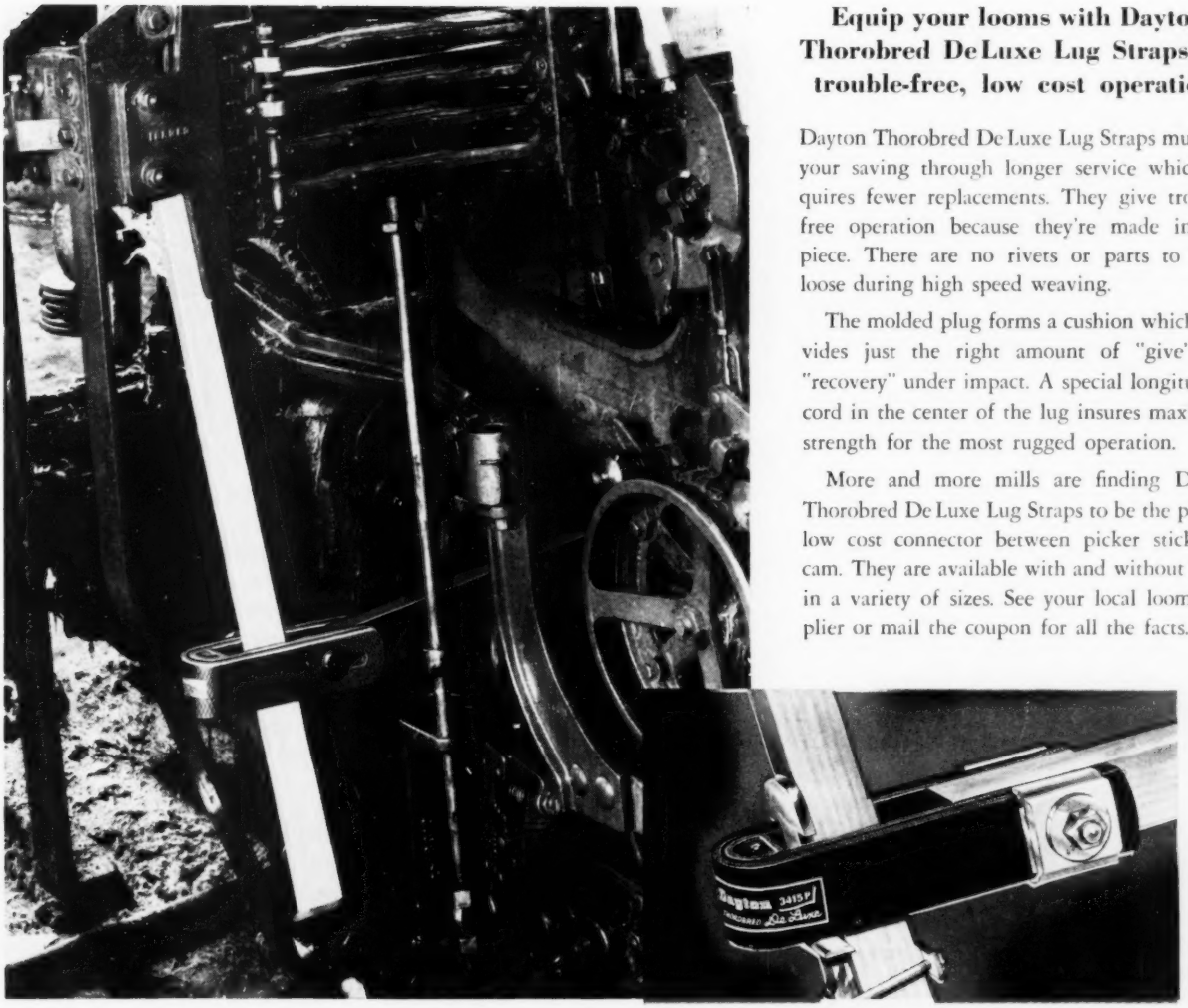
Because of this "3 point controlled density" construction, stresses are prevented from passing on to other parts of the loom. In addition, more efficient shuttle action is assured. Because Daytons last far longer than ordinary pickers, replacement costs are lower. They are available in reversible and non-reversible types.

Contact your loom supply man today or mail the coupon for complete details.



reduces loom wear!

Pickers and Lug Straps



Equip your looms with Dayton Thorobred De Luxe Lug Straps for trouble-free, low cost operation.

Dayton Thorobred De Luxe Lug Straps multiply your saving through longer service which requires fewer replacements. They give trouble-free operation because they're made in one piece. There are no rivets or parts to work loose during high speed weaving.

The molded plug forms a cushion which provides just the right amount of "give" and "recovery" under impact. A special longitudinal cord in the center of the lug insures maximum strength for the most rugged operation.

More and more mills are finding Dayton Thorobred De Luxe Lug Straps to be the perfect low cost connector between picker stick and cam. They are available with and without plugs in a variety of sizes. See your local loom supplier or mail the coupon for all the facts.

Dayton Rubber
Since 1905

Textile Products for Better Spinning and Weaving

Dayton Rubber Co., Textile Division,
Woodside Bldg., Greenville, S. C.

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DAYTON RUBBER COMPANY
Textile Division, Dept. 346
Woodside Bldg., Greenville, S. C.

Please send complete details on money saving Dayton Thorobred Drop Box Pickers and Dayton Thorobred De Luxe Lug Straps.

*Name*_____

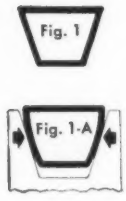
*Mill Name*_____

*Address*_____

*City*_____ *Zone*___ *State*_____

This simple idea saves money in V-Belt Costs

You can prove it in two minutes!

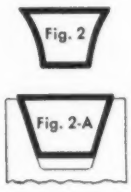


To prove how the CONCAVE SIDES of GATES VULCO ROPES *save money*, just make this simple test—

Bend *any* V-Belt that has *straight sides* (Fig. 1) and—as the belt bends—*feel* the sides *bulge out* (Fig. 1-A). This out-bulge concentrates the wear at the points shown by arrows—and this naturally shortens the life of a *straight-sided* belt!

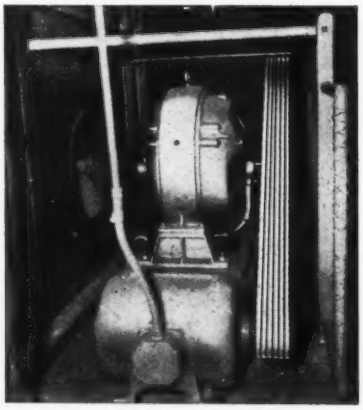
Now bend a Gates Vulco Rope with CONCAVE SIDES (Fig. 2)

(U. S. PAT. 1813698)



You find that the CONCAVE SIDES *fill out* and become perfectly straight. They thus press *evenly* against the V-pulley. All wear is distributed *uniformly* across the *full width* of the GATES VULCO ROPE—and this means *longer* belt *life* and *lower* belt *cost* for you!

When you buy V-Belts, be sure to get the V-Belt with the CONCAVE SIDES—the GATES VULCO ROPE!



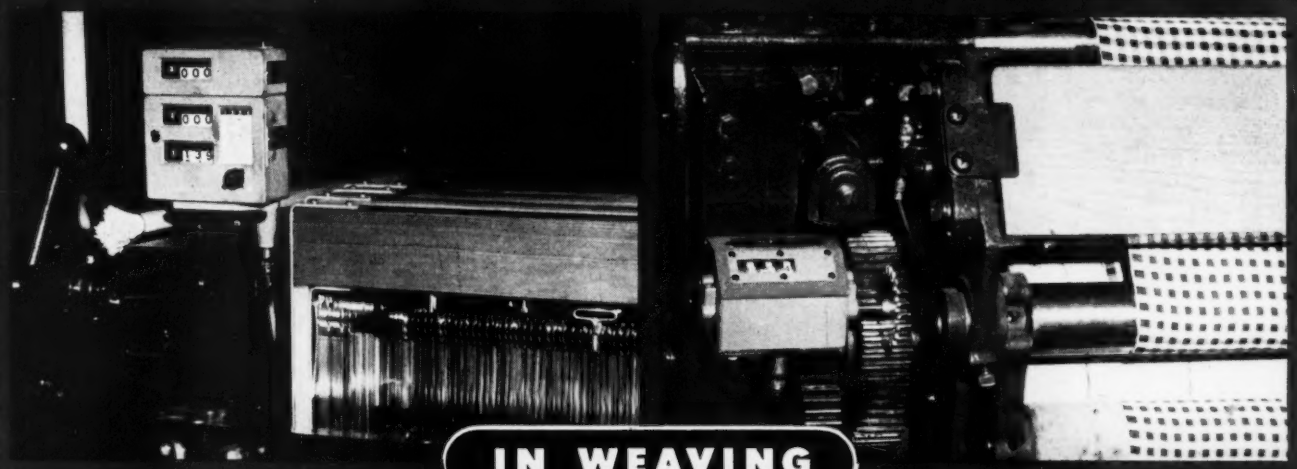
Typical Gates Vulco Rope Drive—the Gates V-Belts are built with Concave Sides to insure longer belt wear.

VULCO ROPE DRIVES

THE GATES RUBBER COMPANY
DENVER, U.S.A.

Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

CS-345



IN WEAVING

UNIFORMITY all through the mill
. . . Get VEEDER-ROOT COUNTERS
on all machines you buy or modify

Yes — better, *automatic* uniformity all through the mill is what you can count on, with this complete Veeder-Root "*Count*rol Package." Surveys show that the "backbone of control is accurate production recording and reporting" . . . and that reliable counters are the most inexpensive means of maintaining that control.

On preparatory equipment, Veeder-Root Counters keep can-variation and piecings to an absolute minimum . . . and enable the mill to run the largest economical packages.

On looms, Veeder-Root Counters help maintain exact uniformity of cut-lengths of cloth, and are the basis for "Production *Count*rol."

It pays any mill to be sure . . . when modernizing present equipment or buying new . . . to get the new and complete Veeder-Root "*Count*rol Package." *You'll save important money!* Get in touch today with the nearest Veeder-Root office.

Here's your Complete V-R
"Countrol Package"

ON LOOMS	ON FRAMES
2-3-4 Pick Counters Cut Meters	2-3-4 Hank Counters Predetermining Ctrs.

Get this "Countrol Package" on all present and new machines

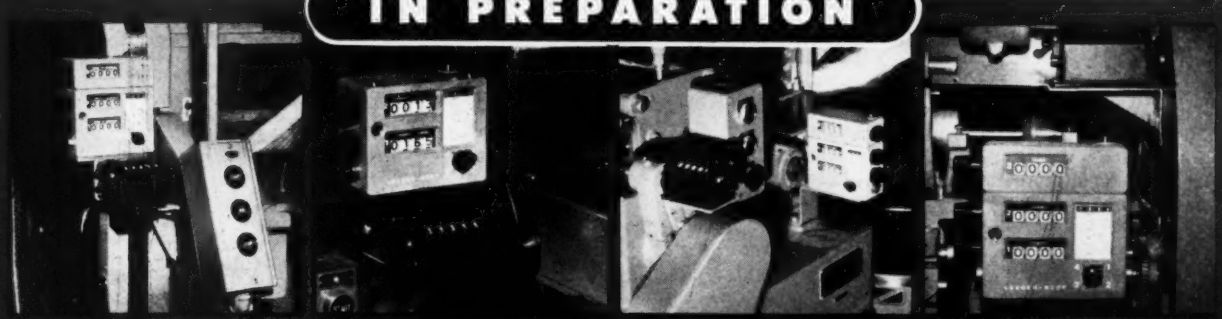
VEEDER-ROOT
INCORPORATED

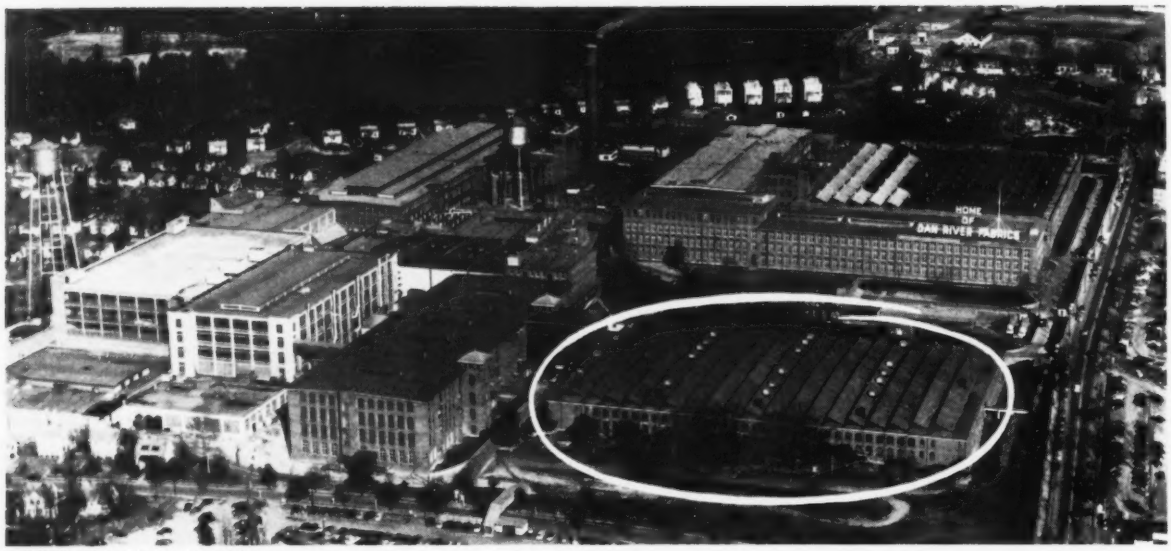
HARTFORD 2, CONN. --- GREENVILLE, S. C.

Chicago 6, Ill. • New York 19, N. Y.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name That Counts"

IN PREPARATION





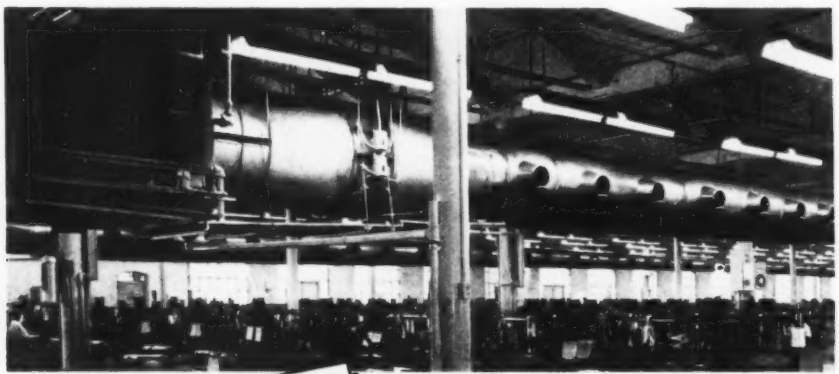
*ONE OF THE TOP 100

DAN RIVER MILLS SAFEGUARD QUALITY AND INCREASE PRODUCTION WITH BAHNSON HUMIDUCTS

Over the years, the Dan River name has earned for itself an exceptional reputation for consistent high quality in fabrics.

Such a reputation must be zealously guarded . . . and in the large weave room Bahnson Air Conditioning plays a vital part in quality maintenance, while at the same time increasing production. Bahnson Humiducts were chosen because of their flexibility, low first cost and low operating cost.

Bahnson is the outstanding preference in air conditioning among the nation's leading mills. If the production headache in your mill today is one of humidity, air conditioning or cleaning, Bahnson engineering will provide your efficient, economical solution for a more profitable tomorrow.



Bahnson Humiducts, each handling approximately 20,000 cubic feet of air per minute, maintain uniform temperature and high humidity without supplementary evaporation in this Weave Room at Dan River Mills. For details on the Humiduct Unit System, write for NEW Bulletin 4A.

* 91 OF THE TOP 100

Of the 100 top textile manufacturing firms in the nation, 91 are users of Bahnson equipment . . . a record of preference that is high testimony to Bahnson engineering skill.

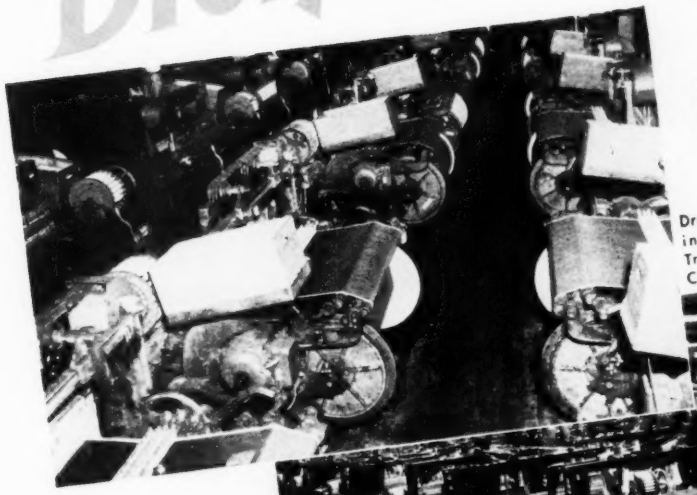
Bahnson
COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING • HUMIDIFICATION • CLEANING

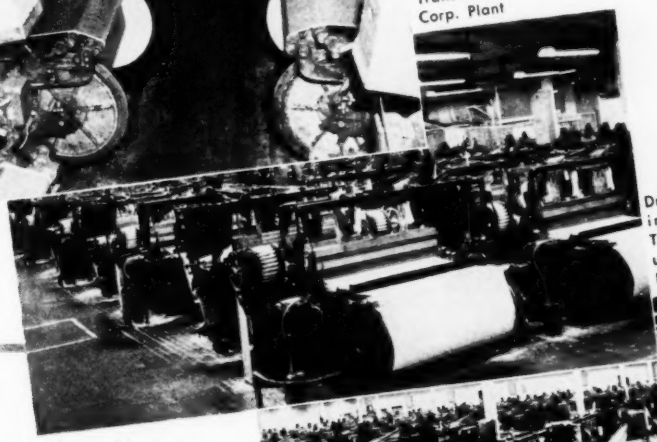
Diehl POWER TRANSMITTER

is assuring maximum weaving efficiency in leading mills

Thousands of Diehl Power Transmitters are operating DRAPER LOOMS in leading textile mills. Many have been in continuous operation for five years.



Draper X2 looms operating with Diehl Power Transmitters in Cone Mills Corp. Plant



Draper XD looms operating with Diehl Power Transmitters at Bibb Manufacturing Company, Columbus, Georgia.

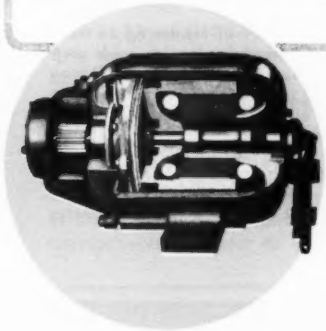
Draper XD looms operating with Diehl Power Transmitters at the Lyons Plant, Synthetic Division, M. Lowenstein and Sons.

MILL MEN ARE ENTHUSIASTIC ABOUT THESE FEATURES

- "Stored energy" for smooth, rapid starts and positive picking
- Precision braking.
- Minimum fluctuations of speed and motor current.
- Lower power consumption.
- Lower motor heat losses.
- Eliminates current regeneration.
- Simplicity and ease of maintenance.

. . . all of which adds up to increased mill production, improved quality of cloth, lowered operating costs and long, trouble-free service.

We will welcome an opportunity to tell you—without obligation—how the Diehl Power Transmitter can bring these benefits to you.



This cutaway view illustrates the inverted construction of the power transmitter and shows the rotor which revolves around the outside of the stator on a hollow shaft—providing the essential inertia without the disadvantages of a separate fly wheel. Note the pinion driving shaft with attached clutch-plate which is shifted axially by simple lever at front end of motor, regulating clutch engagement pressure and providing controlled driving and braking action.

Visit us at booth 114

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

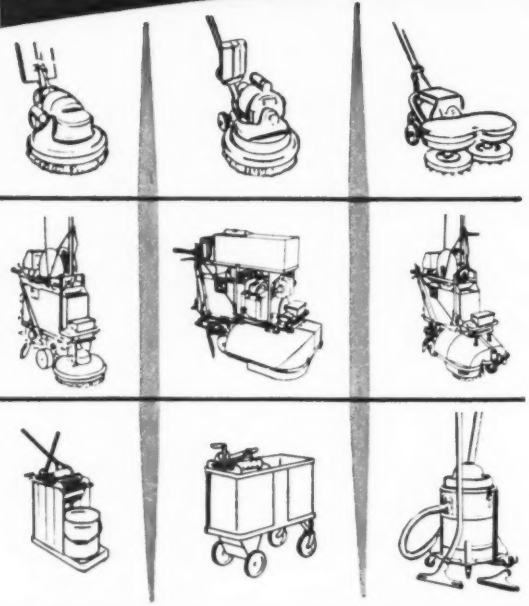
ATLANTA • BALTIMORE • BOSTON • CHICAGO • DETROIT • NEW YORK • PHILADELPHIA • WORCESTER

Keep your floor-maintenance men happy . . .

with *Job-Fitted* EQUIPMENT!

Choose from the COMPLETE *Finnell* Line

More than a score of models and sizes permits selection of the equipment that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell makes *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes . . . a *Dry-Scrubber*, with self-sharpening brushes, for cleaning grease-caked floors . . . *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including gasoline as well as electric models . . . *Mop Trucks* . . . *Vacuum Cleaners* for wet and dry pick-up, including a model with By-Pass Motor. In addition, *Finnell* makes a full line of fast-acting *Cleansers* for machine-scrubbing . . . *Sealers* and *Waxes* of every requisite type . . . *Steel-Wool Pads*, and other accessories — *everything for floor care!*

In keeping with the *Finnell* policy of rendering an individualized service, *Finnell maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you* to help solve your particular floor-maintenance problems . . . to train your operators in the proper use of *Finnell Job-Fitted Equipment and Supplies* . . . and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1909 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

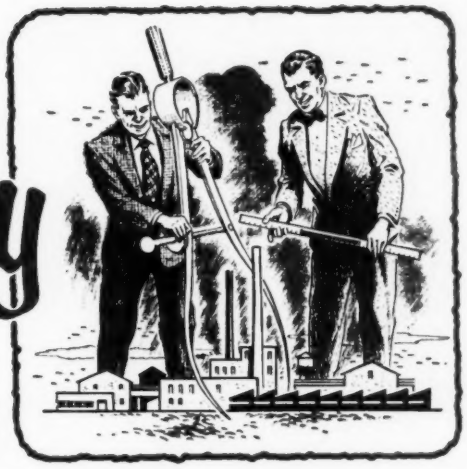
Originators of Power Scrubbing and Polishing Machines

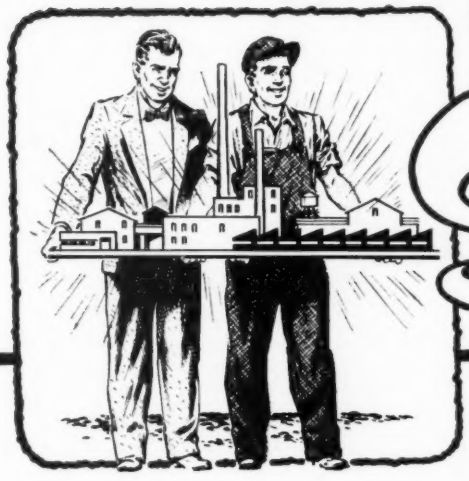
Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

See the Finnell Exhibit • **Southern Textile Exposition** • **Greenville, S. C.** • **Oct. 4-9** • ***Space 110***

from Survey to Service...





WHITIN SPINNING CHANGEOVERS ARE YOUR BEST BUY!

WHITIN SPINNING CHANGEOVERS

- **COMPLETE SUPER-DRAFT CHANGEOVER** — Consists of all necessary material to convert three-roll drafting system or other makes of long-draft systems to Whitin Super-Draft.
- **PARTIAL SUPER-DRAFT CHANGEOVER** — Applicable to all frames equipped with Whitin Long-Draft, and to some other types of long-draft systems.
- **TRAVERSE INCREASE** — Applicable primarily to all Whitin frames of any model or age, and many others. 6½" and 7" traverse can be increased to 9", and in some instances longer.
- **BAND TO TAPE DRIVE** — Applicable to all Whitin frames and to practically all others.

SPINDLES — RINGS — ROLLS. In conjunction with any or all of the changeovers described above, or separately, new Whitin spindles, rings, and rolls are improving the performance of old spinning frames everywhere.

A Whitin representative will be glad to call at your mill, make a survey and provide you an estimate of the cost of modernizing your spinning with any or all of these changeovers. No cost or obligation, of course.

To modernize your spinning frames successfully for maximum profitable operation the survey of what should be done, the quality of the parts supplied, and the subsequent service to assist you in solving your operating problems, are all equally important.

Only from Whitin will you get the unparalleled experience, the knowledge of the original frame construction, and specialized engineering skill that goes into the survey. *Only* from Whitin will you get the quality changeover materials that are precision designed and manufactured for your frames. *Only* from Whitin will you get the unfailing expert service that will be so helpful — advice on drafts, settings, speeds, twists, etc., and new techniques.

Visit our display of Whitin Engineered Repair Parts at the

SOUTHERN TEXTILE EXPOSITION

GREENVILLE, S. C. • OCTOBER 4-8, 1954

featuring the services available from our large plant at Charlotte, N. C.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • **SPARTANBURG, S. C.** • DEXTER, ME.

For more information, write direct or use Reader Service post card.

Stop in for a Friendly Greeting

Southern Textile Exposition

BOOTHS 245 — 246

Greenville, South Carolina

OCTOBER 4 - 8, 1954

Tuffer TRADE MARK CARD CLOTHING

HOWARD BROS.

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., and Gastonia, N. C.

Direct Representation in Philadelphia, Pa., and in Canada

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metalic Card Breasts Rewired at Southern Plants • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

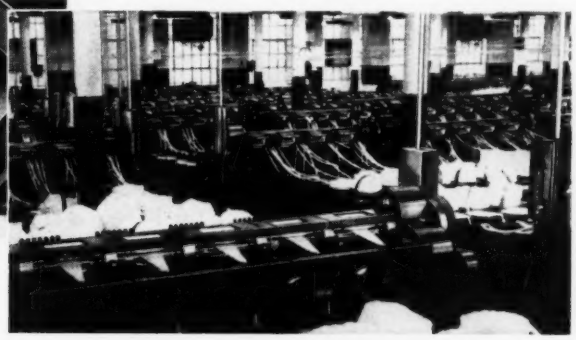
B-6

For more information, write direct or use Reader Service post card.

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

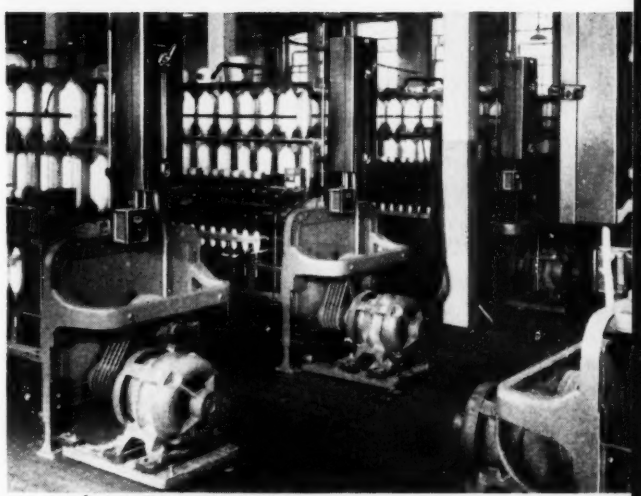
for **EXPOSITION** at Atlanta.
(At left) Cutler-Hammer Magnetic Starters and Safety Switches in the opener room and (below) Cutler-Hammer Combination Starters on drawing frames.



Specify it by name

Cutler-Hammer is the natural choice of experienced men who know dependability in motor control for textile manufacturing is too important to be left to chance. They know that Cutler-Hammer dependability is not a mere competitive claim but a fact that can stand out clearly in a mill's operating records to reflect favorably on their own ability and good judgment. They also know Cutler-Hammer dependability is not an occasional happenstance... that it is the earned advantage of the longest and most intensive specialization in motor control engineering... that it can safeguard every control need over the entire range of textile manufacturing requirements from the simplest starter to the most complex of electronic equipment.

You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

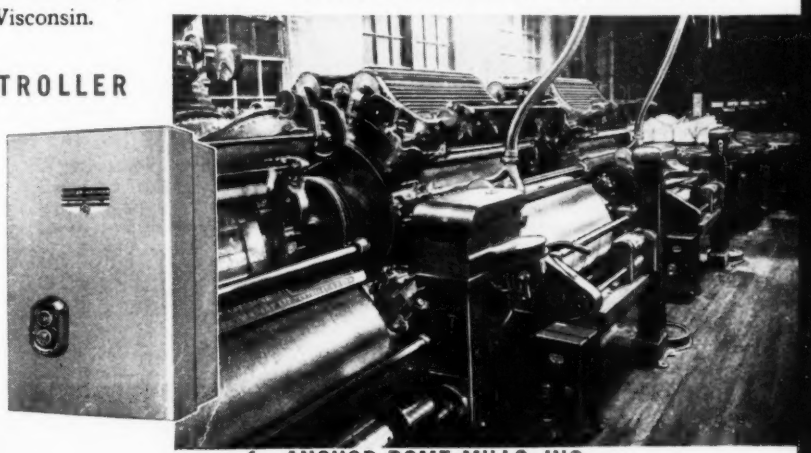


for **STATESVILLE**
Cutler-Hammer Combination Starters and Shipper Rod Switches on spinning frames. STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.

CUTLER-HAMMER CARD CONTROLLER

With integral drum type reverse switch

Here in one self-contained unit is all the control needed for a card...convenient pushbutton starting and stopping *plus* an integral reverse switch for cleaning and grinding. Card cannot be reversed accidentally or by any unauthorized person when controller case is padlocked. Easier to install. Easier and safer to use. Felt-gasketed against lint. Famous Cutler-Hammer Eutectic Element Overload Protection specially arranged to provide long starting time (required for cards) without loss of normal operating protection.



for **ANCHOR ROME MILLS, INC.,** at Rome, Ga.
Cutler-Hammer Card Controllers in a neat installation for individual card drives.

CUTLER-HAMMER
MOTOR CONTROL
C-H

Visit our Booths 431-432 at Southern Textile Show
October 4-8, Greenville, S. C.

Custom-made SHUTTLES

Shown below are Watson-Williams shuttles for Draper Looms

L MODEL
18½" long
for 8¾" quill

E MODEL
16½" long
for 8¾" quill

E MODEL
15¾" long
for 8" quill

X2 MODEL
16½" long
for 8¾" quill

XD MODEL
15¾" long
for 7⅜" quill

The Shuttle People

Watson-Williams specializes in custom-made shuttles, manufactured to your exact requirements, both for C & K and Draper Looms. Among the scores of shuttle improvements by the Shuttle People, one of the most important to your weaving today is the Blanchard Quarter Turn Tension Eye Locked Adjusting Screw.

Your visit will be welcomed at our Booth, No. 128, Southern Textile Exposition, October 4-8, 1954, Greenville, S. C.

Southern Representatives:

Watson & Desmond, Box 1954, Charlotte, N. C.

Arthur J. Bahan, P. O. Drawer 779, Greenville, S. C.

John Wyatt, P. O. Box 701, Greensboro, N. C.

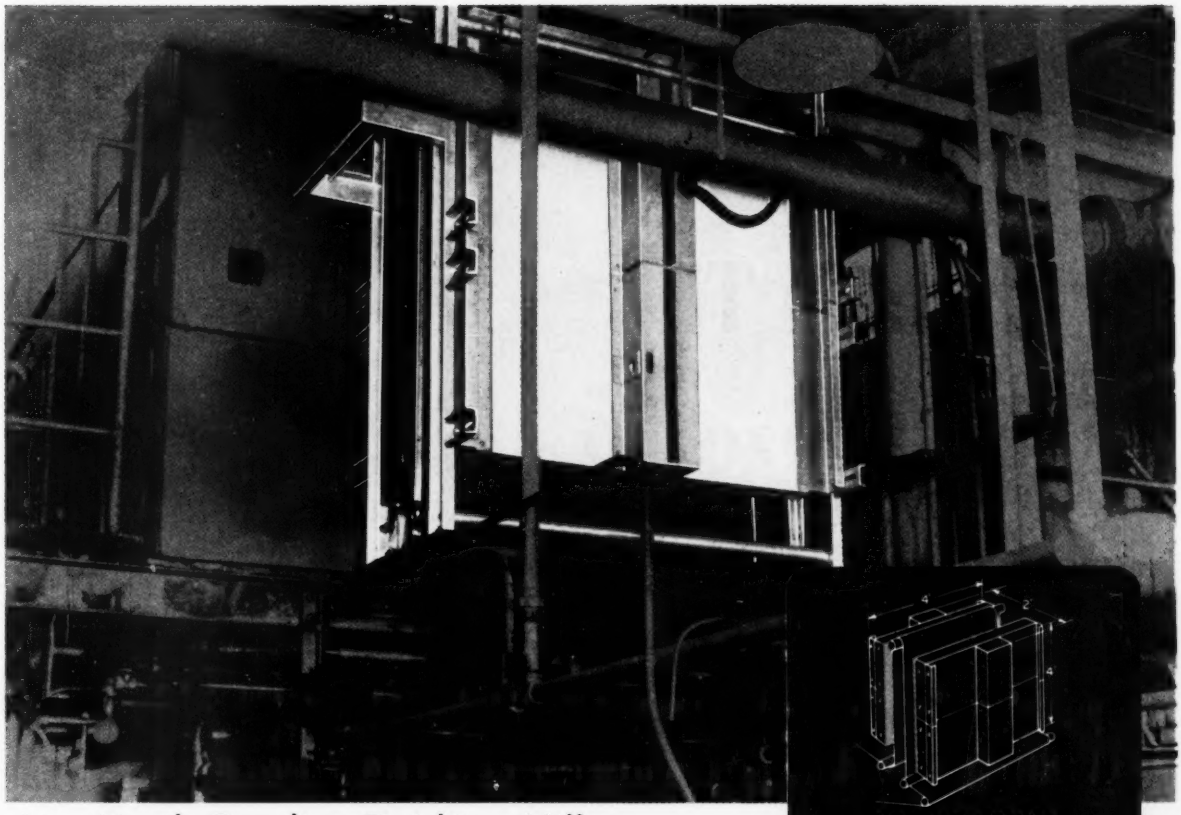
Northern Representatives:

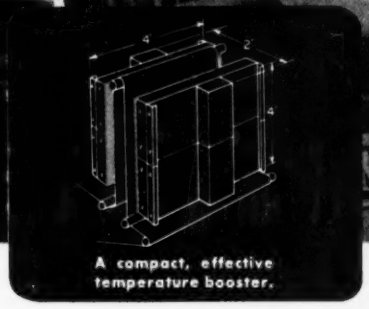
Guy C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.

Sutton M. Ebert, P. O. Box 7144, Elkins Park, Philadelphia, Pa.

WATSON-WILLIAMS MFG. CO.
MILLBURY, MASSACHUSETTS

October 4-8, Greenville, S. C.





A compact, effective temperature booster.

At a North Carolina Finishing Mill

SMALL INVESTMENT INCREASES DRYING CAPACITY 42.7%

You can get similar increased drying capacity with a surprisingly small investment. The booster heater used here represents an investment of less than $1600 in Chromalox Electric Radiant Panels. Installation, in unused space, was made ahead of an existing drying range.

In this compact and effective temperature booster, cloth passes between two facing walls of uniform, intense, "color blind" electric radiant heat, radiated from metal-sheath heat sources. No ventilation, steam lines, ducts or other equipment for fuel supply or by-product exhaust were required. Electrical connections were easily made to the built-in copper bus.

If you need higher capacity (and want it quickly) on your drying applications; or if you are curing resin finishes, latex backing or are heat setting synthetics—look to Chromalox Far-Infrared. Our staff of Application Engineers will be glad to work with you.

See CHROMALOX

FAR-INFRARED

Southern Textile Exposition

October 4-9, Greenville, S. C.

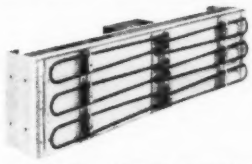
BOOTH No. 702

EDWIN L. WIEGAND CO.

7701 THOMAS BLVD. PITTSBURGH 8, PA.

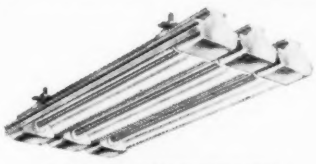
SC-14

These Chromalox Far-Infrared Units Help Reduce Drying, Curing, Heat Setting Costs



ELECTRIC RADIANT PANELS

Complete, pre-engineered oven components with built-in insulation, frame, pre-heating airways and 100-ampere bus—ready to erect and connect. Sizes 1 x 4 ft., 2 x 4 ft., 1 x 5½ ft. and 2 x 5½ ft.; all standard voltages; 2.7 kw. (9200 BTU's) per sq. ft. per hr.



ELECTRIC RADIANT HEATERS

A tough, compact far-infrared generator that fastens to simple framing for economical ovens in dozens of shapes. Each unit is only 3¾" wide; lengths, 2 to 12 feet; 0.6 to 7.2 kw.; all standard voltages; 1.83 kw. (5100 BTU's) per sq. ft. per hr.

See them in operation during the Textile Show

or if you can't make it—Write for Textile Application Reports

What's The Best Size To Gaulin-Homogenize?

. . . a cotton, worsted or synthetic size?

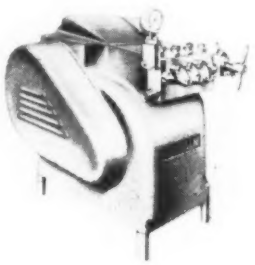
THERE are mills now using a Gaulin Homogenizer to improve all three — sizes for cottons, worsteds and synthetics. Of course, the largest number of Gaulin installations are in cotton mills. But we've got dozens of them in rayon mills. And we're making more and more installations for worsteds and some of the newer synthetics.

What are some of the advantages in Gaulin Homogenizing these sizes? Just listen to what some typical operators tell us.

"A Gaulin Homogenizer makes even a pearl starch into a finer size . . . with a stable and uniform viscosity. It penetrates yarn lightly but evenly . . . bonds fibers together smoothly, firmly — without coating or matting and making them brittle. We find we can see the difference in the quality of our warp yarn."

"Besides getting more uniform results, we save on starch, steam and supervision . . . make less hard size . . . and can store our sizes as long as 48 hours."

Most mills tell us it takes only 6 to 18 months for a Gaulin to pay for itself. If you're not using one now, why not test one right in your mill — it won't cost you a cent. We'll be glad to install it for you over a weekend, on a satisfaction or money-back guarantee. Whether you're making cottons, worsteds or synthetics, just drop us a line asking for a Gaulin sales engineer to call.



Manton-Gaulin

MANUFACTURING COMPANY, INC.
72 GARDEN ST., EVERETT 49, MASS.
World's Largest Manufacturer of Homogenizers
Triplex Stainless-Steel High Pressure Pumps and Colloid Mills
Southern Representative: W. A. Hewitt, P.O. Box 961 Greenville, S. C.

For more information, write direct or use Reader Service post card.

NON-FLUID OIL

TRADE MARK REGISTERED

FOR *CLEAN* LUBRICATION

NON-FLUID OIL is preferred in 7 out of 10 leading mills because first, it gives *more* and *better* lubrication per pound than ordinary oils. Secondly, it keep *off* goods in process, thereby cutting costs and increasing production.

Ordinary oils that leak and spatter cause costly "seconds"; NON-FLUID OIL remains *in* bearings and lubricates until completely consumed. Yes, NON-FLUID OIL outlasts ordinary oil 3 to 5 times and thus saves you application *and* lubricant costs.

Learn for yourself why textile men choose NON-FLUID OIL. Write now for free testing sample and instructive bulletin.

NEW YORK & NEW JERSEY LUBRICANT CO.

292 Madison Avenue, New York 17, N. Y. **Works: Newark, N. J.**

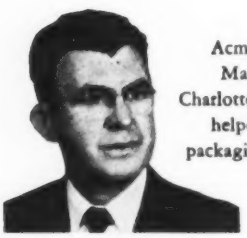
Southern District Manager: Lewis W. Thomason, Jr., Charlotte, N. C.

WAREHOUSES: Birmingham, Ala. Atlanta, Ga. Columbus, Ga. Charlotte, N. C. Greensboro, N. C. Greenville, S. C. Chicago, Ill. Springfield, Mass. Detroit, Mich. St. Louis, Mo. Providence, R. I.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

Visit our Booth No. 109 at the Southern Textile Exposition, Greenville, S. C., October 4-8.

AIM* for INCREASED packaging productivity with Acme Steel Strapping Ideas



Acme Idea Man, Mark Brown of Charlotte, N. C., has helped solve this packaging problem.

ask your
*Acme Idea Man
to help solve your
problems

Acme Steel Strapping Idea #402 for securing tire fabric helps keep shipments at Firestone Textiles, Gastonia, N. C., abreast of continuous production schedules. The bulky rolls of tire cord fabric, five feet long and up to 36" in diameter, are covered with burlap and then firmly bound with steel strapping. Acme Steel Strapping, as used in this one operation, makes it possible for two men to package ten to twelve 1300-pound rolls an hour. This application of Acme Steel's strapping methods and tools at Firestone reduces materials handling and shipping costs and makes sure merchandise will arrive undamaged.

Your Acme Steel Idea Man is a specialist in all problems involving materials handling. He's always ready to help save time and money in your shipping and packaging operations. Call him —or write Acme Steel Products Division, Dept. TW-EE-94, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

AIM *For Safe, Lower-Cost Shipping*

ACME STEEL

for lower cost control of moderately **Corrosive** fluids

Fig. 2651-A Gate

JENKINS

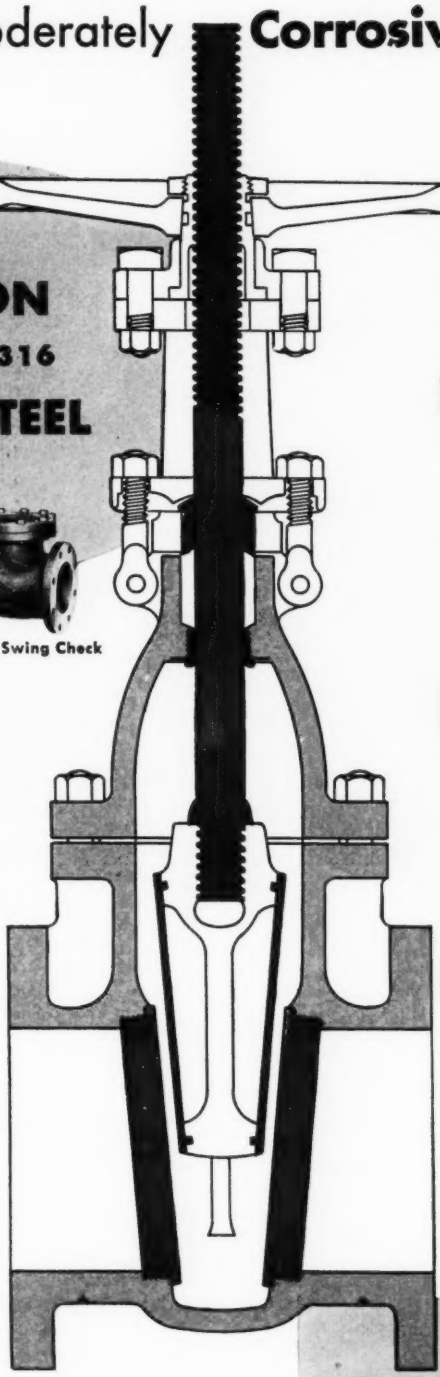
NICKEL IRON

Valves with Type 316

STAINLESS STEEL

Trim

Fig. 2624 Swing Check



Every part in contact with fluid is the right metal to block corrosion and beat wear.

Cast NICKEL IRON

- **BODIES** Heavy duty, dimensioned for greater resistance to wear and abuse. Through port design in Gate Valves.
- **BONNET** Rugged construction, like body. Swing-type gland bolts. Screwed-in back-seating bushing. Deep stuffing box.
- **YOKE** Integral with bonnet in 2″ to 4″ sizes.
- **WEDGE** In 10″ to 24″ sizes, with Stainless Steel Wedge Rings.
- **COVER** In Check Valve.

Type 316 STAINLESS STEEL

- SPINDLE
- GLAND
- BONNET BUSHING
- SPINDLE RING
- WEDGE PIN
- WEDGE RINGS Rolled into Nickel Iron Wedge in 10″ to 24″ sizes.
- SEAT RINGS
- DISC and HANGER in Check Valve

NI-RESIST Type No. 2

- WEDGE of I-beam structure is solid NI-RESIST in 2″ to 8″ sizes.

PRESSURE RATINGS

2″ to 12″—200 lbs. O.W.G.
14″ to 24″—150 lbs. O.W.G.

This combination provides corrosion resistance well above the moderate need in many processing services with an investment well below that for all-stainless steel valves.

Designed primarily for the chemical process industries, they are recommended for control of mildly corrosive liquids with minimum quantities of mineral acids, such as creosote in wood treatment, and many liquids carried in petroleum processing.

A major use is in pulp and paper processing, particularly in lines serving the digester, and in the chemical recovery cycle. Service records in lines carrying the valve-punishing "black liquor" give Jenkins Nickel Iron Valves top performance rating.

Jenkins *extra value* construction throughout. Get details — compare. See why they stretch your valve investment dollar — with longer service life, lower maintenance cost.

ALSO RECOMMENDED for fluids used in electroplating, photograph finishing, textile bleaching, dyeing and finishing and heat treating of metals.

GET COMPLETE SPECIFICATIONS from your Jenkins Valve Distributor, or write: Jenkins Bros., 100 Park Ave., New York 17. Ask for Bulletin 118.

JENKINS

LOOK FOR THE DIAMOND MARK

VALVES

SINCE 1864 TRADE JENKINS MARK

Jenkins Bros.

'Round the World 1113 times for $1.00

Calculations based on performance records of Victor 4/0 F1.1 X3D Travelers show that one dollar's worth ran about 27,840,000 miles — 1113 times the distance around the equator.

When you see performance like that, it's easy to think that traveler costs are too small to be worth bothering about. But such records are achieved only when you choose the right traveler for the job, and get the best that money can buy.

Selecting travelers carelessly, without proper regard for quality, will quickly cut down the "mileage". Also, excessive ends down, plus frequent traveler changes, can boost your traveler-pound cost in yarn production far out of line.

When you choose Victor Travelers, a Victor Service Engineer will help you make sure to get the traveler best suited to your individual spinning or twisting. You also get extra long traveler-life, because Victor Travelers take top honors in any test for quality and uniformity.

Remember, traveler costs per pound of yarn depend, *never* on price, *always* on performance. Plan now to talk to a Victor man, whether you are running conventional fibers, synthetics, or blends. Write, wire or phone the nearest Victor office . . . for prompt service.

•

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . . 20 Mathewson St. . . . . Tel. Dexter 1-0737

GASTONIA, N. C. . . . . 914-916 East Franklin Ave. . . . . Tel. 5-0891

VICTOR Ring Travelers

When Cotton Was a Smuggler's Prize...

Few Realized It Would One Day Be a Staple Fabric of Nations!

Outlawed because manufacturers of silks, velvets and tapestries declared the popular new fabric would ruin them—for nearly 100 years cotton cloth was prohibited in France. Yet the fashion-conscious French women defied laws and danger to wear the precious contraband.

Often their cotton frocks were ripped from them in the streets as government agents tried in vain to enforce the Edict of 1686. Fines, penalties and violence could not stem the demand for the new printed and dyed cottons, however. Secret warehouses were set up; and cotton became the highly prized cargo of smugglers. Finally, authorities bowed to the inevitable, and in 1759 the restrictions on cotton were removed.

Today cotton textiles are a taken-for-granted part of our everyday living. The tremendous advances in production methods plus intelligent merchandising methods have made them generally available for all. Among the important contributions to modern cotton textile manufacture are Staley's sizing and finishing starches.

Staley's starches have proved their superiority in many of the nation's leading textile mills. For information write today.

Staley's Sizing and Finishing Starches for Every Purpose

PEARL STARCH • ECLIPSE®
STA-GEL® • STA-THIK® • DEXTRINS
STACLIPSE • CORN SYRUP

PRODUCTS FROM CORN
Staley's

THERE IS A SUPERIOR QUALITY STALEY STARCH FOR EVERY TEXTILE NEED

A. E. Staley Manufacturing Company, Decatur, Illinois

A Complex Tying Job Licked—

by TITAN

warp tying machine

Installation at Belrug Mills, Inc.

Evidence of the performance of the "Titan" Warp Tying Machine is shown here—in a letter from BELRUG MILLS, INC., Greenville, S. C. . . . . ▶

Faced with a complex tying problem because of their multi-beam loom set-up, Belrug Mills selected the "Titan" Warp Tying Machine as being best suited for their needs. An Edda engineer assured their getting maximum efficiency from the machine by proper instruction to the Belrug personnel.

•

IT WILL PAY YOU TO INVESTIGATE THIS EXTREMELY VERSATILE MACHINE FOR ANY WARP TYING JOB

•

See all three of the *NEW* 1954 models of the "Titan" Warp Tying Machine in operation at the SOUTHERN TEXTILE EXPOSITION, Greenville, S. C.,—Booth #503.

Belrug Mills, Inc.

WUNDA WEVE

Luxury Loomed Colorful Cotton Carpets

148 River Street, Greenville, S. C.

July 30, 1954

Mr. H. A. Nagel
Vice President
Edda International Corporation
468 Fourth Avenue
New York 16, New York

Dear Mr. Nagel:

I would like to take this opportunity to let you know that the Titan Warp Tying Machine which we purchased from you this spring is giving us very satisfactory results, and it is doing all that we expected of it.

I believe one of the reasons this operation is so successful is the fact that our personnel were given such a complete training program by your representative.

Thank you for your help, and with kindest regards, I am

Yours very truly,

BELRUG MILLS, INC.

W. W. Pate
President

WWP/hl

TITAN

EDDA INTERNATIONAL CORP.

468 FOURTH AVE., NEW YORK 16, N. Y. CALHOUN TOWERS, GREENVILLE, S. C.

now
going
into
the
finest

FABRICS

ACRILAN®

CHEMSTRAND NYLON

the new Acrilan...the advanced fiber that offers mills cleaner processing, greater dyeability, outstanding hand, improved performance. Today's fiber . . . for the rich new fabric styles of tomorrow.

Chemstrand Nylon . . . product of a great new nylon plant . . . the only nylon plant in America completely integrated for greater quality control.

See the Chemstrand exhibit at the A.A.T.C.C. National Convention, Atlanta, Georgia, September 15-18. And at the Southern Textile Exposition, Greenville, South Carolina, October 4-8.

THE CHEMSTRAND CORPORATION, 350 Fifth Ave., New York 1 • PLANTS: ACRILAN® ACRYLIC FIBER—Decatur, Ala. • CHEMSTRAND NYLON—Pensacola, Fla

Parks-Cramer
Loom Cleaner

What it is . . .

Blowers in tandem traveling continuously over the looms.

Simple track system, located at looms, leaving upper room areas clear.

Non-loading, paddle type fans.

Air currents directed close to loom surfaces.

Fixed and oscillating air outlets, individually adjustable for direction and velocity, with flexible extensions.

What it does . . .

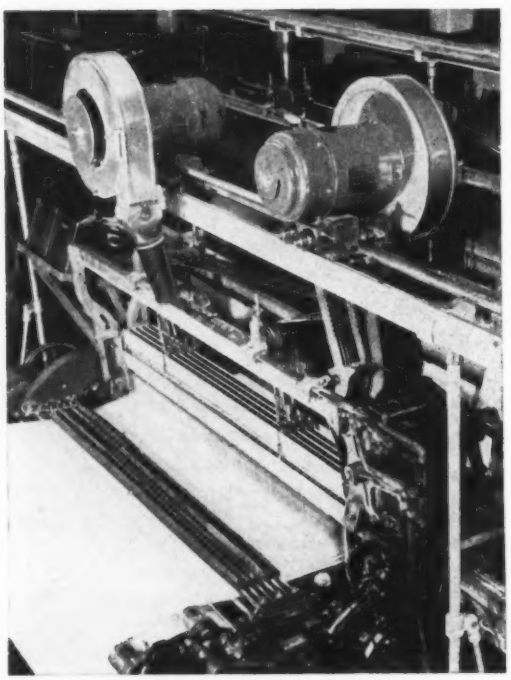
Passes over each loom every five to ten minutes.

Delivers air currents onto arch, harnesses, drop wires, stop motions, transfer motions, harness motions, lay, shuttle boxes, beam, yarns and fabric.

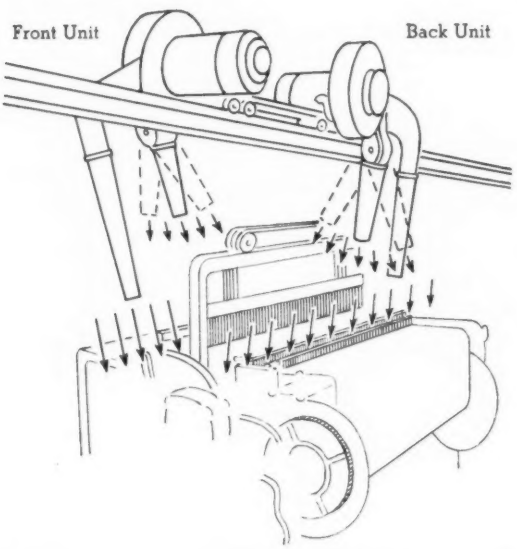
Prevents objectionable lint accumulations between warp-outs.

Eliminates most hand cleaning by compressed air. Lessens loom stops. Increases production.

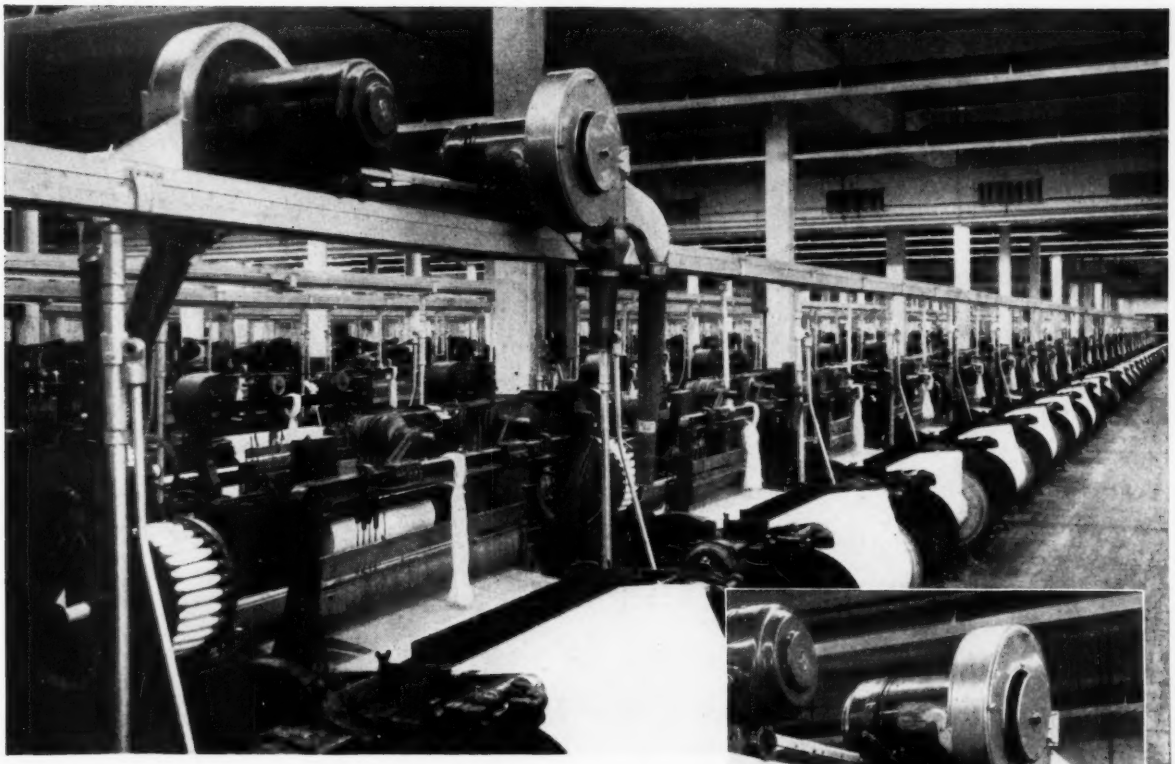
Greatly reduces woven-in lint, oil spots, set and start-up marks, skips, floats, and pick-outs.

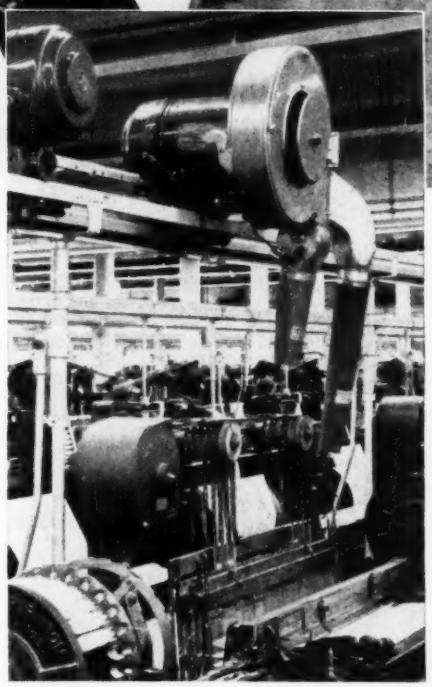


An early installation of Parks-Cramer Loom Cleaners over dobby looms on staple rayons. 65% humidity. No direct humidifiers. Continuously successful for over three years. Pays for itself every eighteen months in labor saving alone.



Air where you want it! Long impregnated cloth air outlets on each unit are fixed. Short impregnated cloth air outlets on each unit oscillate back and forth through adjustable arcs as indicated. Provision for momentary reduction of air from any outlet when passing over critical areas. Safe, rugged track system, largely self-cleaned. No exposed electric conductors.





Loom Cleaners over cotton weaving. 80% humidity. Direct humidifiers and Airchanger. Excellent results. Mill enthusiastically reports 1½% increase in weave room efficiency, 2% less seconds. In addition, system pays for itself every two years in labor saving.

As our experience widens, acceptance of this proved equipment parallels that of our Frame Cleaners.

In accordance with our long-time policy, all possible has been done to make certain of both mechanical performance and cleaning effectiveness under the widely varying conditions of mill and product.

We are now in a position to clean most cotton and cut synthetic weaving ranging from print cloths woven under high humidity on older looms to fine goods turned out by plain and dobby looms at lower humidities.

For further information and recommendations concerning installation in your weave room, consult

Parks-Cramer Company

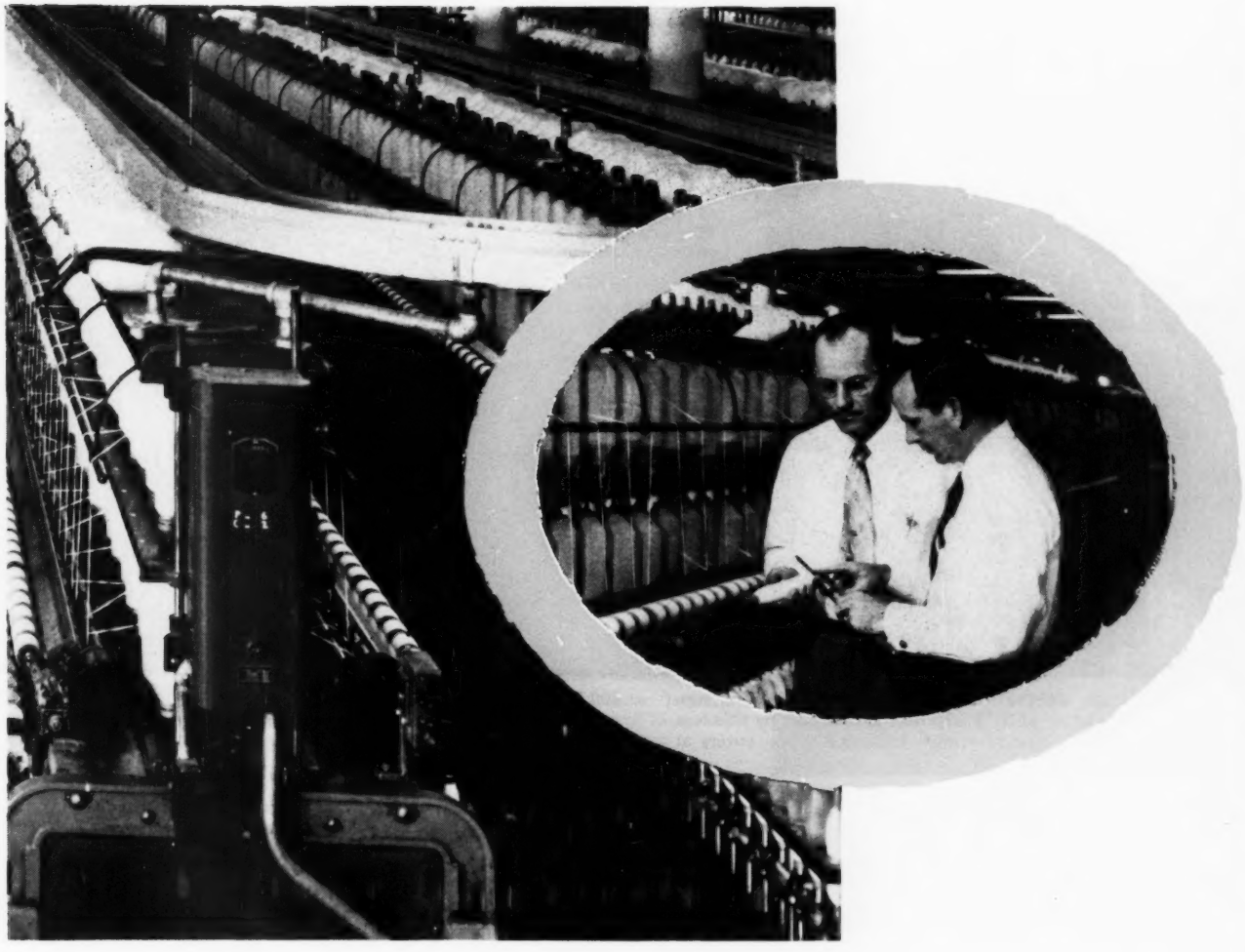
FITCHBURG, MASS. CHARLOTTE, N. C. ATLANTA, GA.

396

Fewer ends down,
power savings up,
since this leading southern mill*
switched to

Gulfspin

* name upon request



Mill personnel report these important benefits since switching to Gulfspin, the revolutionary spindle oil:

(1) Deposits on bolsters and bases disappeared in a short time; (2) a big reduction in ends down; (3) upper spindle lubrication, formerly a constant worry, is now excellent; (4) spindles operate cooler and stay cleaner.

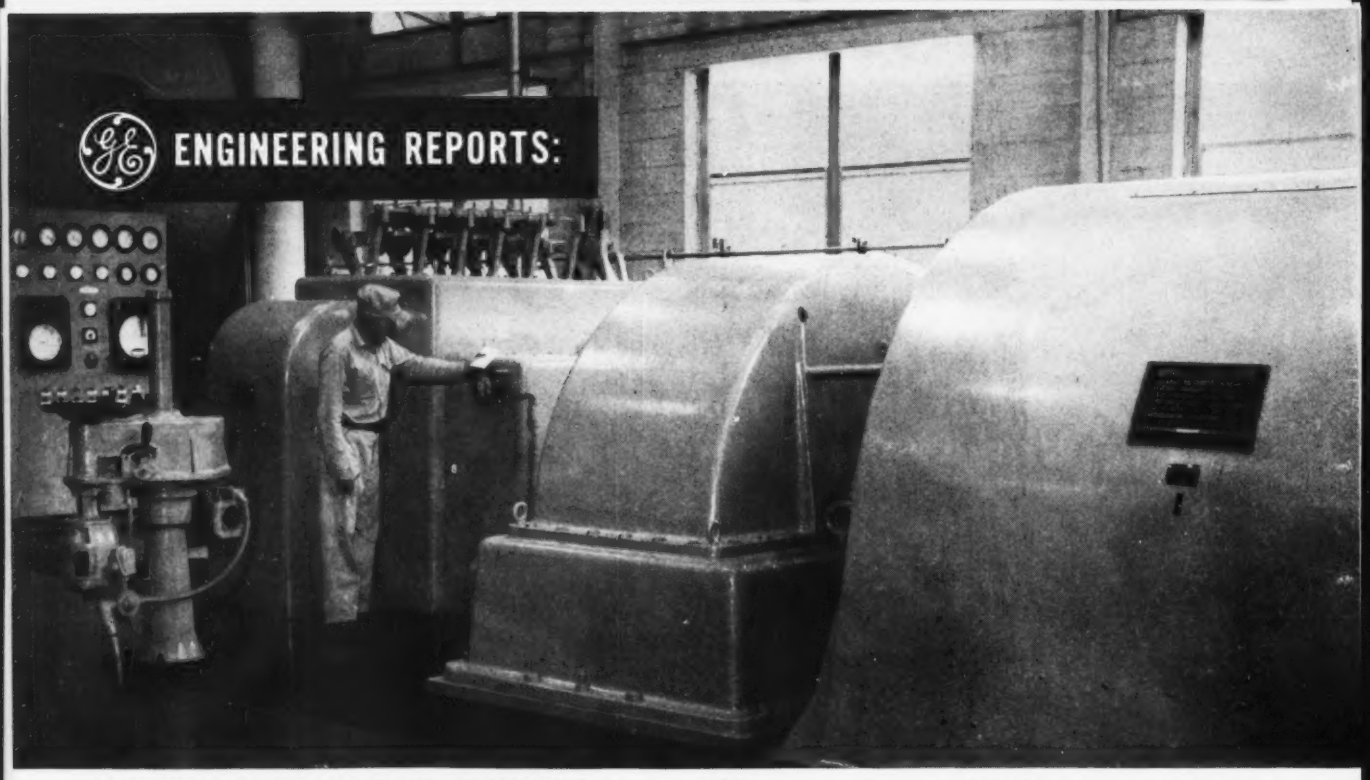
Periodic analyses prove that Gulfspin has not increased in viscosity, even though the spindle bases were last drained in 1947. Result: A substantial power saving.

Gulfspin works three ways to keep spindles clean and insure smoother spindle operation: First, it is oxidation stabilized to resist sludge formation. Second, it prevents contaminants from depositing on spindle parts, a major cause of spindle vibration. Third, it provides effective protection against rust—reduces bolster wear.

Contact a Gulf Sales Engineer at your nearest Gulf office today and give him a chance to prove these advantages of Gulfspin in your mill.

Gulf Oil Corporation · Gulf Refining Company · 1822 Gulf Building, Pittsburgh 30, Pa.

GULF INDUSTRIAL LUBRICATION

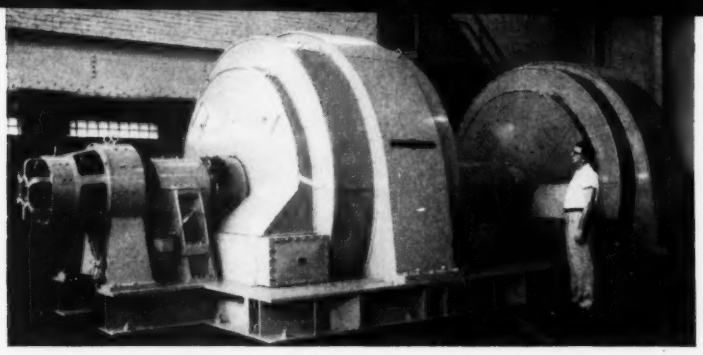


ECONOMICAL, DEPENDABLE POWER GENERATION is supplied at Dan River Mills' Schoolfield mill in part by this new G-E 7500-kva turbine-generator. Incoming steam enters at 600 lb pressure, exhausts at 100 lb for process use in dyeing ranges and tenter dryers. In addition, this modern textile mill also purchases utility power.

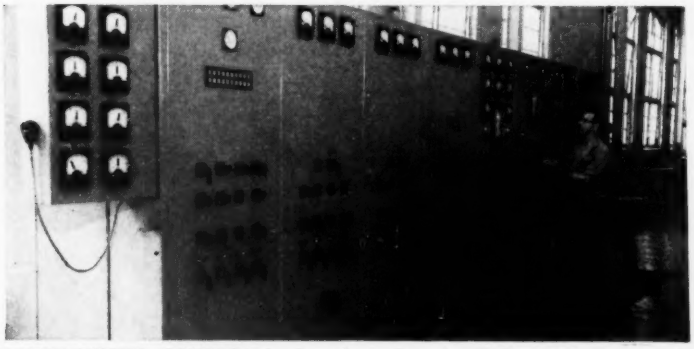
$7-million addition at Dan River powered by flexible General

POWER FOR FINISHING and bleaching is provided by compact G-E load-center unit substation, rated 1000 kva, 6900/600 volts, 60 cycles. Factory-wired, it saves installation costs.

POWER FOR FILTER PLANT, at suitable voltage level, is supplied by these two G-E 1000-kva power transformers, which step down voltage of power purchased by Dan River Mills.



POWER-SYSTEM FLEXIBILITY is made possible by this G-E 5000-kva frequency changer installed previously. It can convert purchased 60-cycle current to 25 cycles, or plant-generated 25-cycle current to 60 cycles.



POWER-SYSTEM CONTROL is function of main G-E switchgear panel, through which all power is distributed. Plant generates 10,000 kw of 25-cycle current, purchases about 100,000,000 kwh of 60-cycle current per year.

Mills Electric system

A new $7,000,000 addition to the finishing mill providing a total finishing capacity of 1,000,000 yards per day was recently added by Dan River Mills to its Schoolfield Division in Danville, Virginia.

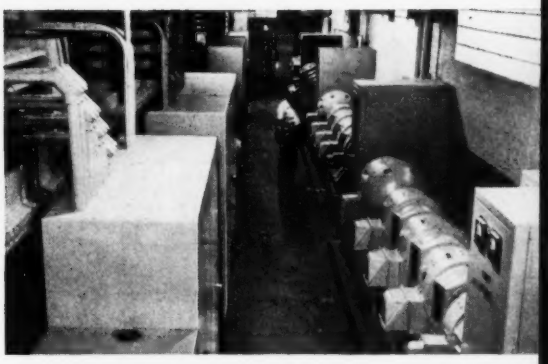
Because this increased load required an expanded electrical system, General Electric application engineers were called in to work with the plant's designers, United Engineers and Constructors. Together, they selected and co-ordinated the electric equipment needed to meet the plant's requirements. This included a 7500-kva turbine-generator, power distribution facilities, and motors and control. G-E field engineers checked initial operation, helped expedite startup.

Most electric power is purchased by the plant at standard 60-cycle frequency. It also generates its own 25-cycle power for some existing equipment, as a by-product of process steam. By a frequency changer that converts 25- to 60-cycle power or vice versa, maximum flexibility in balancing power needs is obtained.

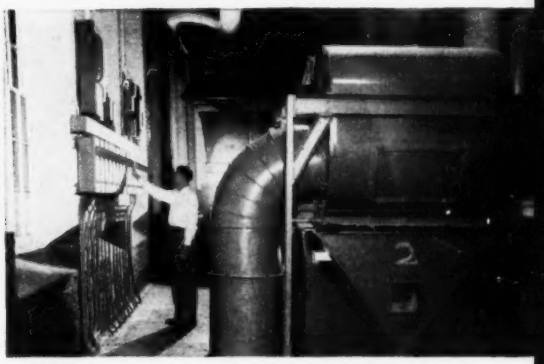
In expanding or modernizing your textile-mill operations, take advantage of the special engineering services available to you through your local G-E Apparatus Sales representative. Call him early in your planning for best results. General Electric Company, Schenectady 5, N. Y. 654-34

Engineered Electrical Systems for Textile Mills

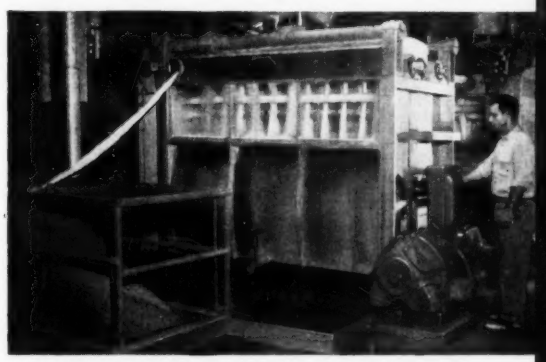
GENERAL ELECTRIC



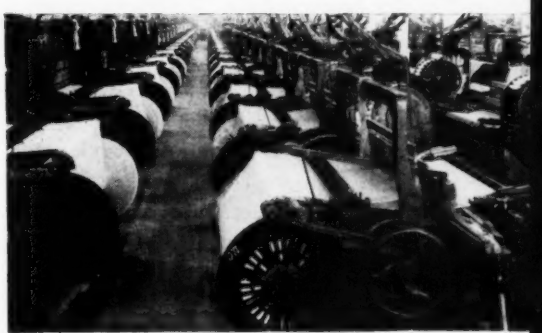
BLEACHING OPERATION is reliably powered and controlled from this room through G-E motors and starters, multiple-generators, and control panels.



PICKER is controlled from this lineup of G-E combination starters. These space-saving units combine in one enclosure both short-circuit and overload protection.

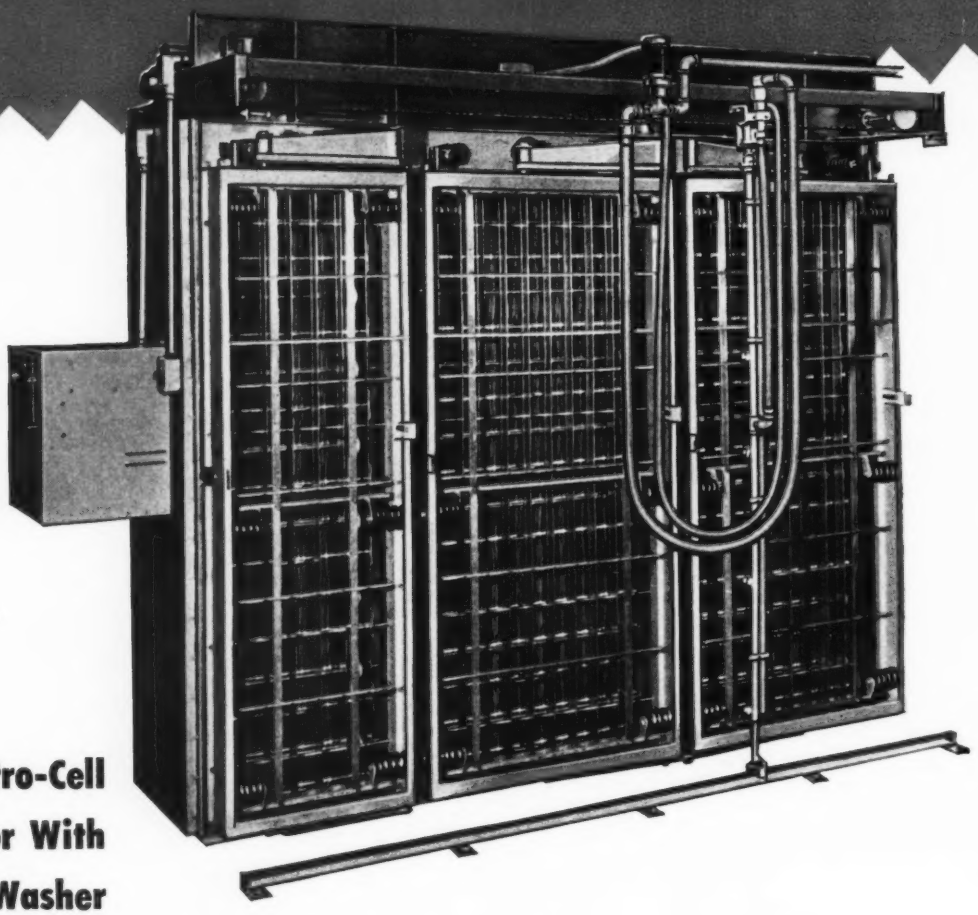


BLEACHING RANGE uses sturdy G-E d-c motors in adjustable-voltage drives. With continuous bleaching, goods are now bleached in 3 hours instead of 32.



WEAVE ROOM uses G-E loom motors, controlled by G-E loom switches, to help meet rigid speed and torque requirements, help maintain maximum output.

YOUR CLEAN AIR "GHQ"



AAF Electro-Cell Precipitator With Type "H" Washer

Removes dust, soot, smoke – and cleans itself – automatically!

THE textile industry has always picked Electro-Cell for the tough air cleaning jobs. Dust, soot and even smoke are "pushovers" for this famous electronic precipitator. Now, with the addition of the new Type "H" Washer, that periodic cleaning operation (so essential to continued efficiency) is reduced to a mere push of a button.

Here's how it works. First, the spray header moves back and forth across the face of the plate cells washing away the dust and dirt. After a drying period, an adhesive coating is then applied to the clean plates through another set of spray nozzles. Each operation is automatically timed. Each side of each plate receives a thorough washing and even application of adhesive over its entire depth. One press of the button does the complete job!

See "push-button maintenance" in operation at AAF Booths 460-461.

THE ONLY COMPLETE LINE OF AIR CLEANERS FOR THE TEXTILE INDUSTRY

IN GREENVILLE!

AAF BOOTHS 460-461 *at the Southern Textile Exposition will be staffed by men qualified to discuss your problems—show you what's new in air filters for the textile industry.*

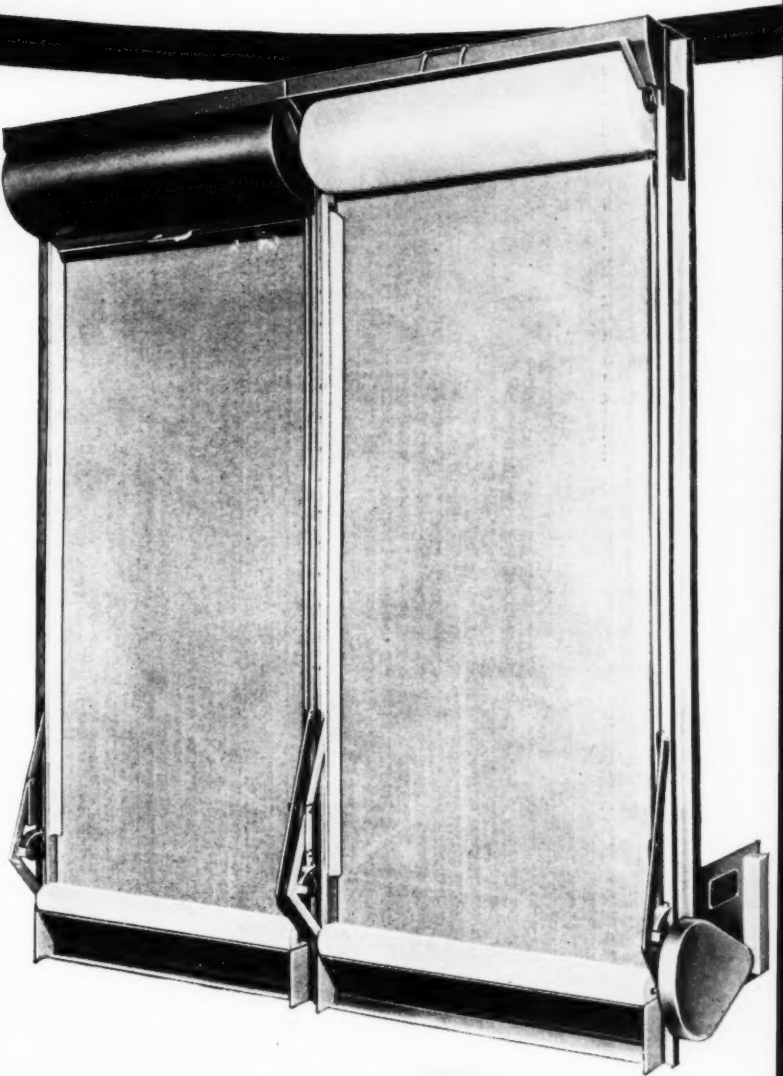
AAF Auto-Airmat

Lets you Live with Lint and Like it!

THE Auto-Airmat was designed and built with but one job in mind—to provide an efficient, practical lint filter for recirculated air in textile mills. It is the first and only automatic, self-cleaning dry-type air filter offered for this service.

The Auto-Airmat not only collects the lint but cleans itself automatically. The Airmat media, installed in roll form at top of unit, moves downward on an endless screen and is rerolled at the base with its lint load. The rate and frequency of screen travel is automatically controlled by a pressure switch. When resistance builds up to a predetermined maximum, the drive mechanism starts—and stops when sufficient clean Airmat has been introduced to reduce the resistance. There's no expensive "week-end cleaning" to keep filter at peak efficiency—and the lint is wrapped up in the roll for easy disposal.

A working model of the Auto-Airmat will be available for your inspection at the show.



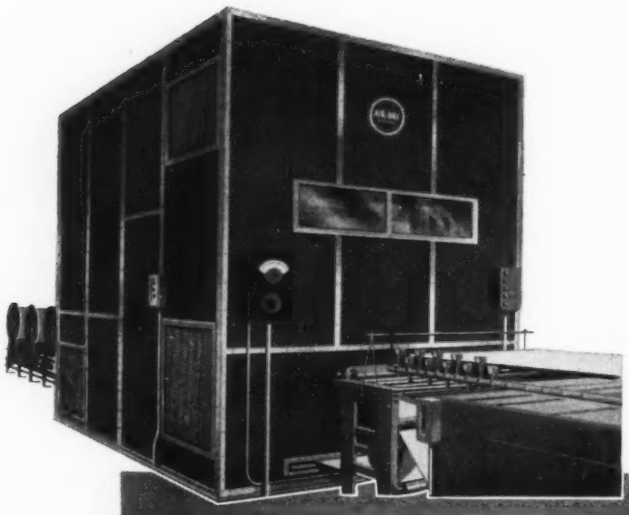
AAF herman nelson

American Air Filter

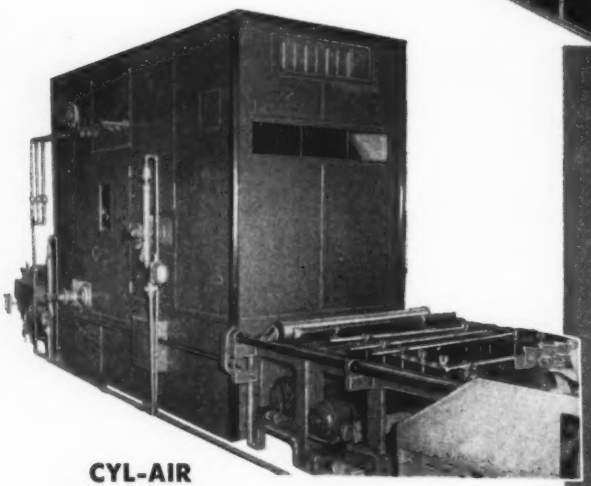
COMPANY, INC.

304 Central Avenue, Louisville 8, Kentucky

American Air Filter of Canada, Ltd., Montreal, P. Q.



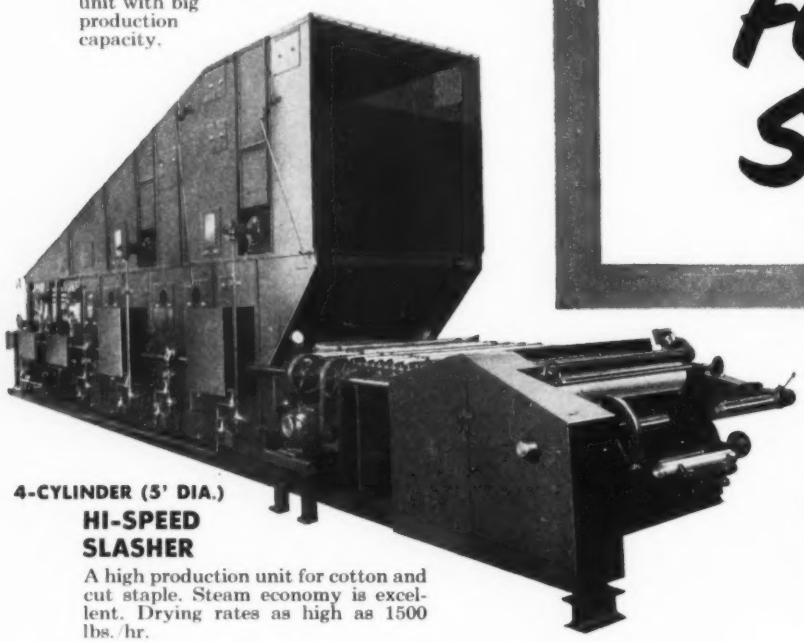
AIR-DRI SLASHER
Ⓡ (Patented)
A high-capacity, hot-air type that is satisfactory for cotton, wool and spun synthetics. Drying rate as high as 1500 lbs./hr.



CYL-AIR SLASHER
Ⓡ (Patented) A new type of dryer that combines benefits of hot air and cylinder methods of drying. It is a highly versatile unit with big production capacity.

For Consistent Quality
Warps at Higher Speeds
Lower Operating Costs . . .

TRY THESE FOR SIZE

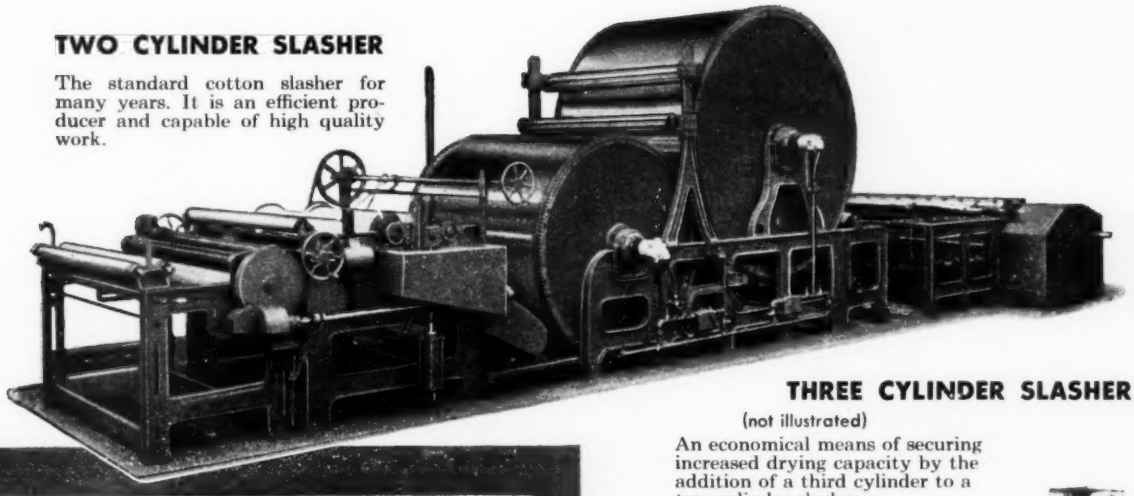


4-CYLINDER (5' DIA.)
HI-SPEED SLASHER
A high production unit for cotton and cut staple. Steam economy is excellent. Drying rates as high as 1500 lbs./hr.

At the
GREENVILLE
TEXTILE SHOW
Exhibit No. 837,
838, 839

TWO CYLINDER SLASHER

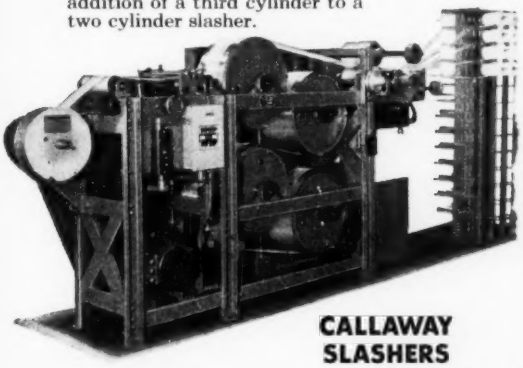
The standard cotton slasher for many years. It is an efficient producer and capable of high quality work.



THREE CYLINDER SLASHER

(not illustrated)

An economical means of securing increased drying capacity by the addition of a third cylinder to a two cylinder slasher.

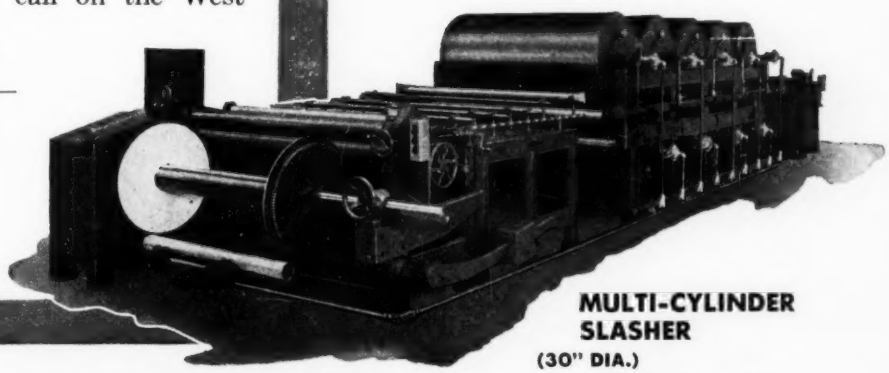


CALLAWAY SLASHERS

Model 50 **Model 51** (illustrated)

Small, narrow-width machines capable of making full width warps for samples, testing, etc., using small amounts of yarn.

There's a WPF&M slasher for virtually every slasher room requirement . . . sample slashing or full production . . . the lightest gauze or the heaviest sheeting . . . natural fibers or synthetics. Whether you require a complete slasher installation from size preparation to the finished warp or modernization of your present equipment, call on the West Point Foundry and Machine Company—specialist in slasher room machinery.



MULTI-CYLINDER SLASHER

(30" DIA.)

A versatile machine which consistently produces a high-quality warp on a wide range of spun and filament fibers.

WEST POINT FOUNDRY & MACHINE COMPANY

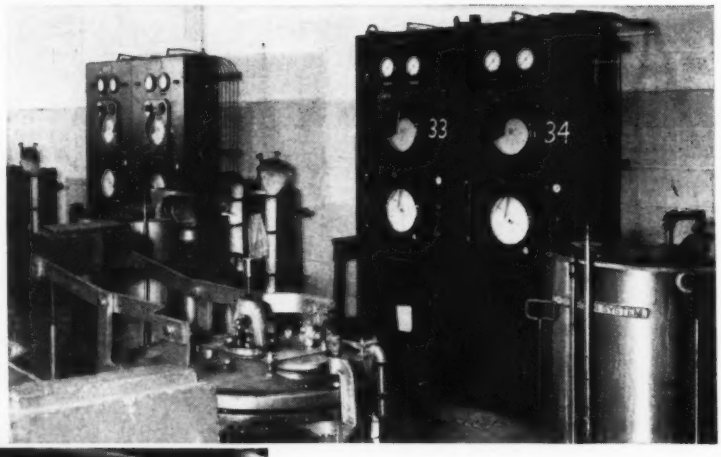
WEST POINT, GEORGIA

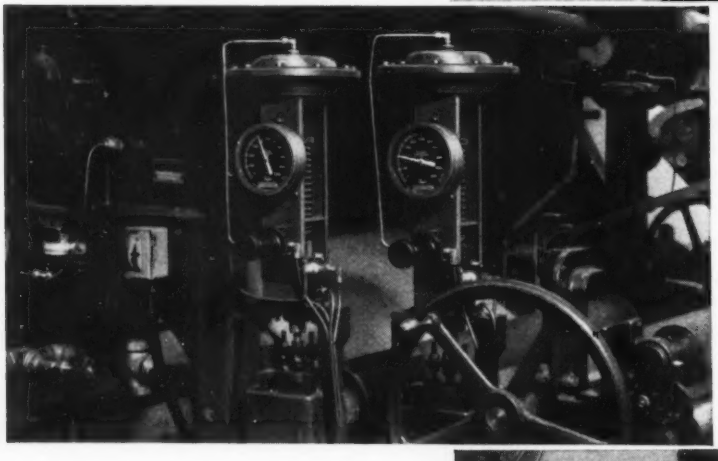
® Registered Trade-Mark

5 WAYS TO

1

Taylor FULFLEX* Time Schedule Controllers insure completely uniform dyeing, extremely close matching of shades and save money on steam and labor too! Here they are automatically controlling package dye machines in a large New England worsted mill. All the operator does is press the start button. There are no cams to cut for different cycles, and any part of the cycle may be repeated by simply resetting the dial and pushing the start button again.



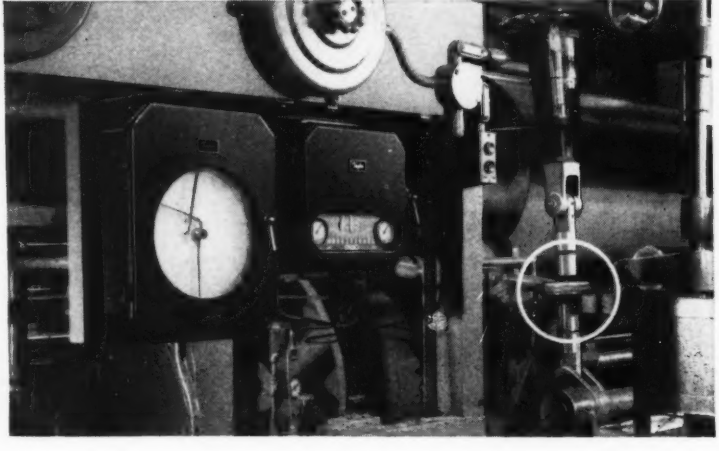


2

No soft spots with Taylor's Squeeze Roll Pressure Control, in use here on a high speed Rayon Slasher in a well known Southern Mill. Out-of-round roll conditions are quickly detected, and uniform penetration of size is insured, because it measures and controls actual pounds of pressure applied directly to the roll —unaffected by friction or leaking air.

3

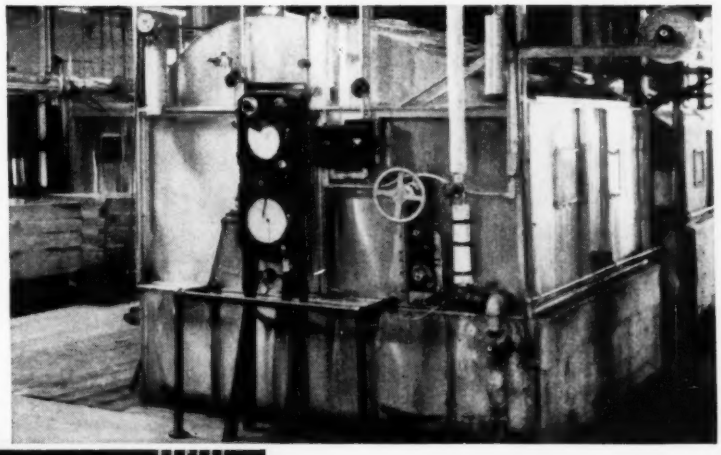
Uniform dyeing is easy with this Taylor Dye Padder Control System, because you can adjust Squeeze Roll Pressure the way you want it, and you're sure of dye liquor level. A FULSCOPE* Liquid Level Controller maintains the level of the dye in the dye box, assuring uniform immersion of the cloth. A Taylor Volumetric Load Recorder accurately shows pressure exerted across squeeze rolls.



*Trade-Mark

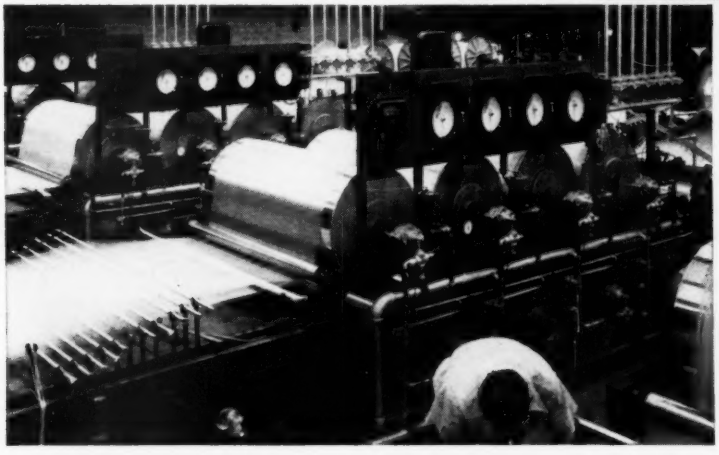
SAVE MONEY

...with Taylor Automatic Controls!



4

A Knitting Company in the North East is very complimentary about the results obtained with this Taylor control system on their dye tubs. In fact they say they wouldn't want to dye without it. Main advantages are that it assures uniform dyeing conditions, preserves the quality of the dyed fabric, eliminates costly errors of manual operation and cuts operating costs.



5

Taylor keeps these modern High Speed Slashers under accurate control, regardless of operating temperature requirements. Control of condensate gives closet possible relationship to cylinder surface temperature to produce a properly slashed warp. Taylor's system of quick, automatic heat-up removes air and water from cylinders promptly.

At the Textile Show you will be struck by the prevalence of the name Taylor on equipment being exhibited by a wide variety of manufacturers. This practically universal acceptance of Taylor control systems is due to our wide knowledge of the industry's problems, and the skill of our engineers in overcoming them with practical instrumentation. Famed for their ruggedness, simplicity of operation, ease of maintenance and long life, Taylor controls can save you money in many ways. Come in and visit us at the Show—or write Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.

Visit our Exhibit

Booths 428, 429, 430

Taylor Instruments
MEAN ACCURACY FIRST

For more information, write direct or use Reader Service post card.

CLINTON

STANDARDIZED STARCHES

FOR THE SIZING AND FINISHING OF

TEXTILES

C HAMBRAY
L AWN
I NTERLINING
N AINSOOK
T ICKING
O SNABURG
N ETTING

F LANNEL
O RGANDY
O XFORD
D ENIM
S HEETING

I MPERIAL
N ANKING
C HINTZ

Technical Service in connection with your specific problems is available upon request.

CLINTON FOODS INC

CORN PROCESSING DIVISION

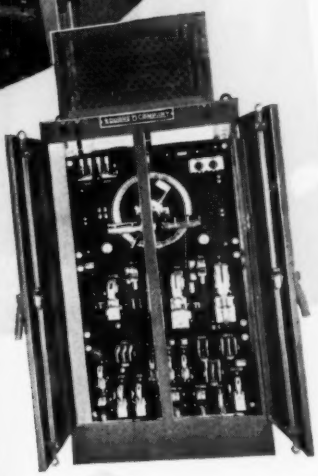
CLINTON, IOWA

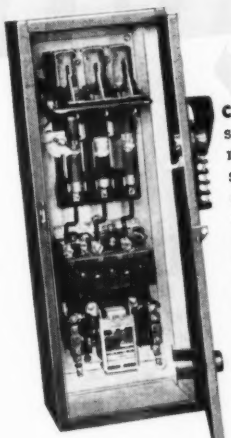
SQUARE D

DESIGN LEADERSHIP in TEXTILE CONTROL

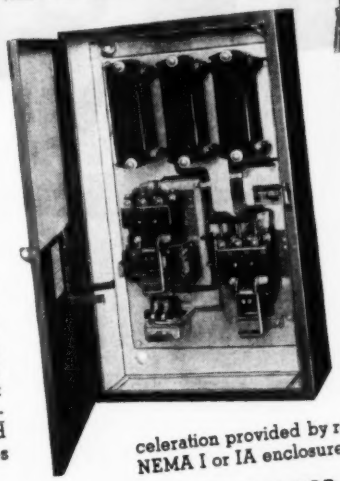
Shipper Rod Control Station Flexible design permits conversion to either l.h. or r.h. operation, clockwise or counter clockwise rotation. Slotted operating arm for easy adjustment. Snap action contact mechanism.

Loom Switch Toggle operation with recessed handle. Protected type overload relays for group fusing. Accessible terminals. Available with line connections either top or bottom. Cover interlock with padlocking provision for maximum safety.





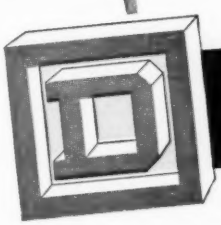
Combination Starter New switch operating mechanism provides maximum safety. Interlock prevents opening door when disconnect is "ON" and self-aligning handle indicates true position of switch. Provision for 4 padlocks. New switch design has visible blades; quick make and quick break; dead-front line terminals. New magnetic starter with guided motion of armature insures long life.



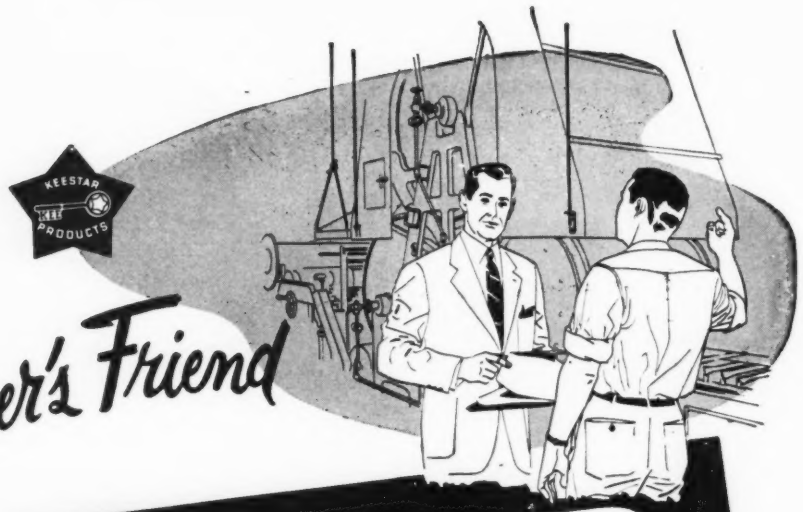
Range Drive Control Custom-built control for padder, tenter, winder, folder, pre-dryer, batcher machines, and other special textile machinery control applications.

Roving Frame Starter Primary resistor type. Definite time acceleration provided by reliable pneumatic timer. Available in NEMA I or IA enclosures.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS



SQUARE D COMPANY



KEESTAR KEE PRODUCTS

the Weaver's Friend

VICTOR Mill Starch

Always Uniform...and Backed by Keever Service

TEXTILE SALES DIVISION
1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA
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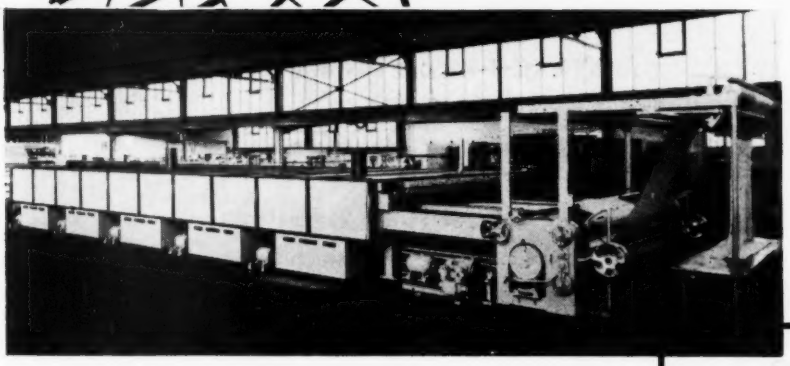
THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO
Corn, wheat and other grain products for industry since 1898

3-3

2 New REINER SENSATIONS!



The Efficient *New* FAMATEX TENTER

PRODUCT of one of the world's largest manufacturers of such equipment, and sold through Reiner-Famatex, Inc., the Famatex Tenter is a compact, versatile, highly efficient and economic unit. It is suitable for both knitted and woven fabrics—its performance has been proven on natural and synthetic fabrics. Nylon setting equipment is also available. For processing of woolens a carbonization unit can be obtained.

The tenter has a stepless speed range of from 1-200 yards a minute. This can be regulated while the machine is in operation. Another unique feature consists of a compartment under the dryer containing a lattice-type conveyor for cooling and conditioning of cloth so it emerges at room temperature.

Other features: **Top quality production at substantial savings—Pin and clip combination permits maximum versatility — Extremely low steam consumption — Single unit installation, no piecemeal additions.**

NO OTHER TENTER LIKE IT!

Request complete details.

THE REINER LINE INCLUDES:

Tricot—Simplex and Raschel Machines—Warpers and Creels for all widths and needs—4 Section Full Fashioned Hosiery Machines up to 75 gauge—4 Section Full Fashioned Sweater Machines—Automatic Flat Power Rib Machines—10 and 15 yard Automatic Schiffli Embroidery Machines—Bobbin Winding Machines (for quilting and stitching)—Multihead Automatic Embroidery Machines—Ready Spare Part Service for all Reiner Machines.

See us at Booth Nos. 138-139, Southern Textile Exposition, Greenville, S. C., October 4-8.

The *New* RABO '54 PERMANENT PLEATING MACHINE

(working width 59½ inches) for processing woven and knitted fabrics of synthetic or natural fibers. Specially developed to produce wash-proof flat, knifed and box pleats in a limitless variety of patterns and designs. Among its many features are sliding guides for pleating several narrow strips simultaneously — temperature control by patented thermionic system — automatic rewind of pleated fabrics — automatic paper feed — water cooled outlet table and many other features. Also available is a twenty-inch Crystal-pleater, with or without bow attachment.

Further Details Upon Request.

1903 50th Anniversary 1953

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 — **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**

PENFORD FINISHING GUMS

(U. S. PAT. NOS. 2,516,632; 2,516,633; 2,516,634)

★ ★ ★ ★ ★ ★ ★ ★ ★

For

The Newly Developed STARCH-RESIN Permanent Finishes for Cotton Fabrics

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Many finishing plants are utilizing **PENFORD FINISHING GUMS** and Resins to produce revolutionary permanent finishes for Cotton Fabrics which combine the dimensional stability and crease resistance obtained with Resins and the traditional hand of Starch Finishes.

PENFORD FINISHING GUMS (starch hydroxyethylethers) possess a high degree of chemical reactivity with both Melamine and Urea Formaldehyde Resins. This makes possible a chemical combination of PENFORD FINISHING GUMS and Resins resulting in a permanent finish combining the desirable characteristics of both conventional Resin and Starch Finishes at low unit costs.

PENFORD FINISHING GUM—Resin Finishes are applied and cured in standard finishing equipment used for Resins.

PENFORD FINISHING GUMS are produced in various viscosity grades, offering a choice of finishes.

Our Technical Sales Service Engineers will be pleased to supply tailored formulations and simple application procedures to provide the specific permanent finishes for your fabrics.

PENICK & FORD, LTD.

INCORPORATED

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Acclaim

...BY ALL MILLS NOW USING

Stehedco DRAWTEX HARNESS

The Ultimate in Harness for Better Drawing In and Weaving; a Development Dating Back to the Middle 1930's along with the Barber Colman Drawing-In Machine.

Today, more and more mills are taking advantage of the DRAWTEX Features listed below.

DRAWTEX FEATURES

1. INCREASED PRODUCTION
... and less down-time due to faster harness adjustment. Exclusive *Stehedco* design permits easy addition or removal of heddles.

2. LESS SECONDS
Completely eliminates warp streaks caused by bunching of heddles at rod supports.

3. LONGER LIFE EXPECTANCY
Greatly increased strength of frames and heddles adds considerably to their lifetime.

4. VERSATILITY
One heddle size can be used for a much wider range of yarn sizes and constructions.

5. NO REPAIR HEDDLES REQUIRED
Every heddle is a repair heddle and can be added or removed at any position on the frame.

6. MORE WEAVING SPACE
Flush end braces allow use of the maximum weaving width.

7. GUARANTEED QUALITY
Material ... Workmanship ... and Finish.

STEHEDCO DRAWTEX HARNESS Takes Care of the Yarn You Buy ... The Fabric You Weave ... and Ultimately the Reputation you Want to Maintain. Do it the DRAWTEX WAY and MAKE IT PAY!

For further information, Write—Wire—Phone the Steel Heddle Field Engineer nearest to you and he will not only place our latest informative booklet in your hands, but answer any questions you may have on this subject as well. See him ... it will be to your advantage to explain why you cannot afford to be without DRAWTEX.

SEE US AT BOOTH No. 137
OCTOBER 4-8, 1954

18th SOUTHERN TEXTILE EXPOSITION
TEXTILE HALL, GREENVILLE, S. C.

Stehedco and Southern
WORLD FAMOUS TRADE MARKS OF THE
Steel Heddle
Mfg. Co.

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A Division of STEEL HEDDLE MFG. CO.
STEEL HEDDLE COMPANY OF CANADA, LIMITED
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Other Plants and Offices: Greenville, S. C. • Atlanta, Ga. • Greensboro, N. C. • Providence, R. I.
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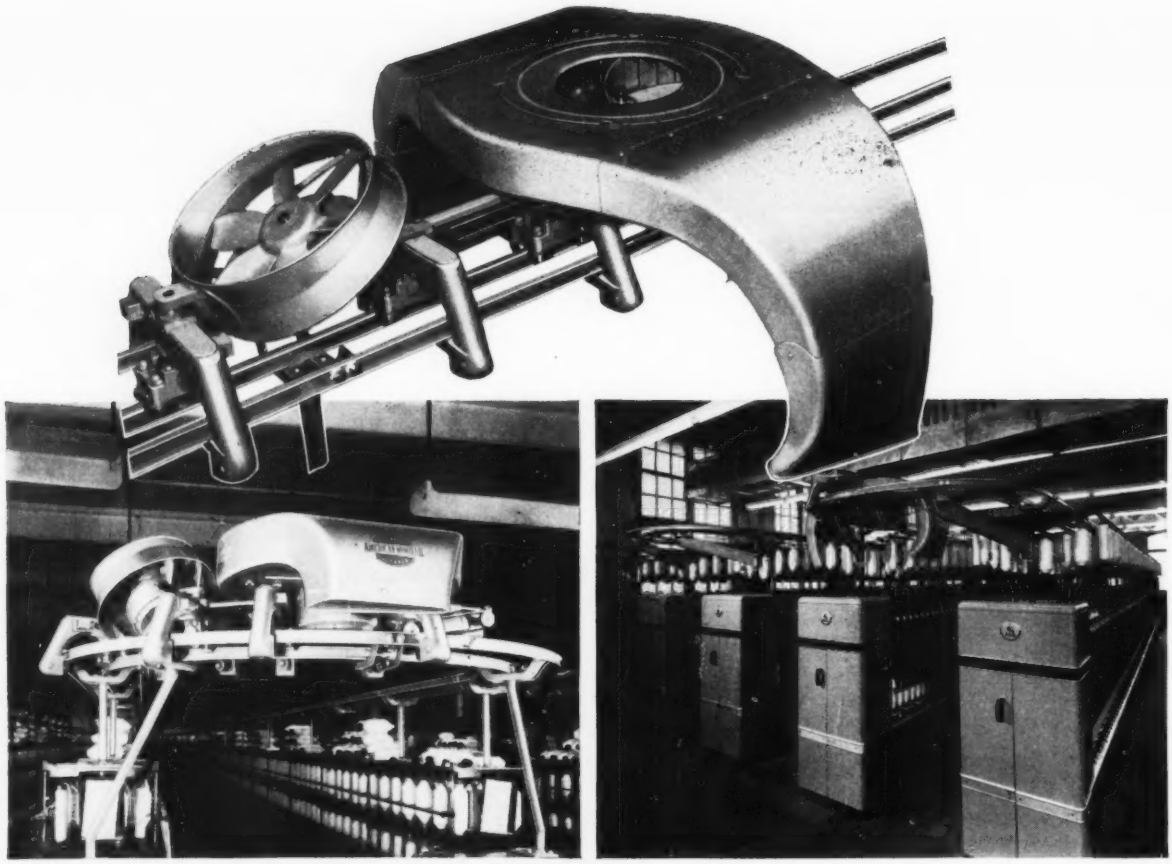


"no manual cleaning . . .

on high speed frames spinning low count waste yarns"

This is a report from a mill operator who recently completed installation of American Tri-Rail Cleaners over SG-1 spinning frames.

In addition to low maintenance cost, there are many other advantages of American Tri-Rail Cleaners.

SEND FOR BULLETIN TR-1

Advantages:

- STABILIZED TRAVEL
- SMOOTH REVERSE
- BETTER CEILING CLEANING
- LOWER HEADROOM
- HIGHER SPEED
- GREATER AIR VOLUME
- HIGHER VELOCITY
- NO CONDUCTORS OR COLLECTORS
- BETTER CREEL CLEANING

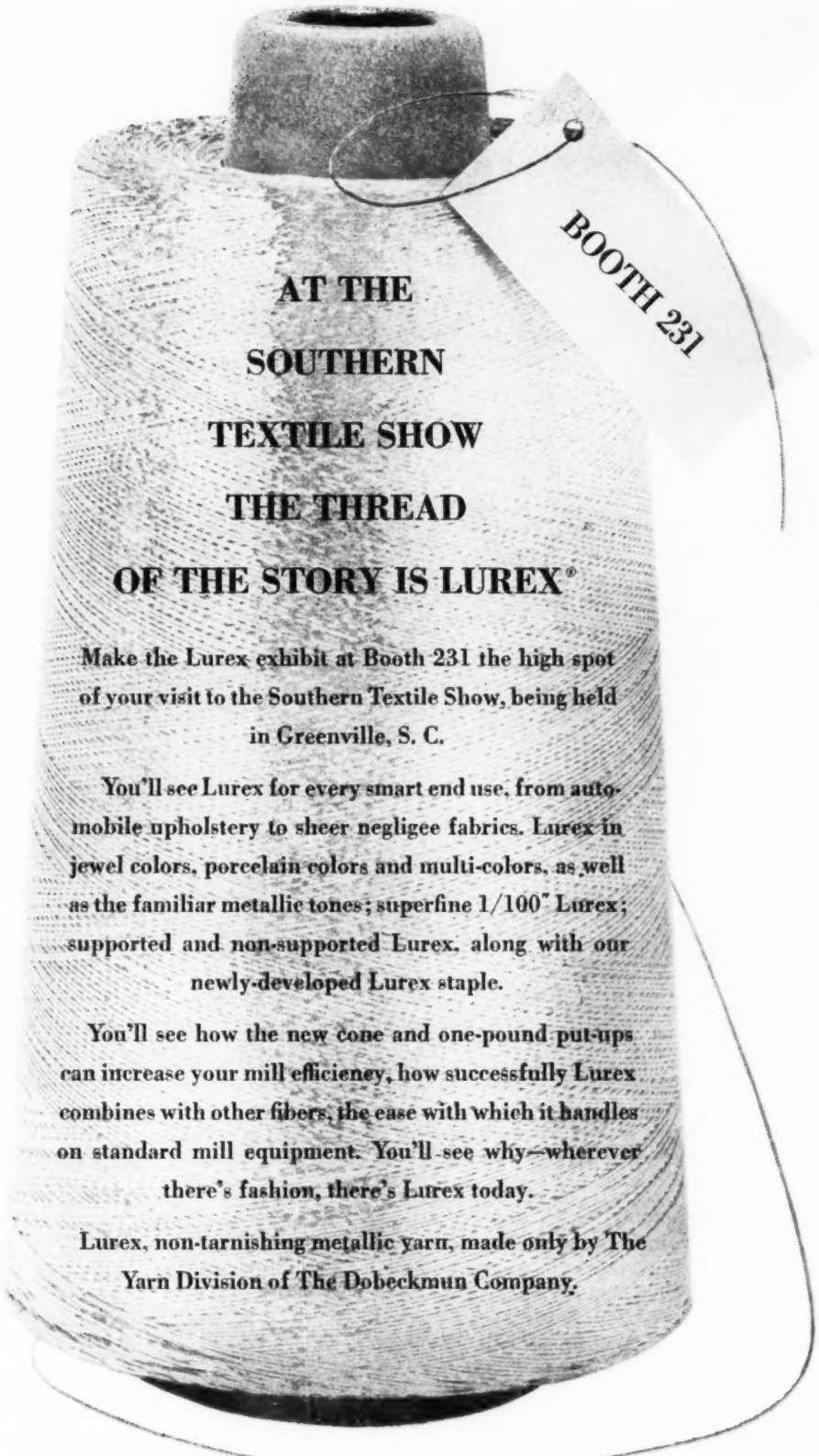
AND CREEL MOUNTED CLEANING IS AVAILABLE FOR ANY TYPE OF FRAME.

AMERICAN OVERHEAD HANDLING EQUIPMENT

MONORAIL COMPANY

13108 ATHENS AVENUE • CLEVELAND 7, OHIO

LET AN AMERICAN MONORAIL ENGINEER GIVE YOU ALL THE FACTS ON SAVINGS AND ADVANTAGES OF TRI-RAIL CLEANING.



AT THE SOUTHERN TEXTILE SHOW THE THREAD OF THE STORY IS LUREX®

Make the Lurex exhibit at Booth 231 the high spot of your visit to the Southern Textile Show, being held in Greenville, S. C.

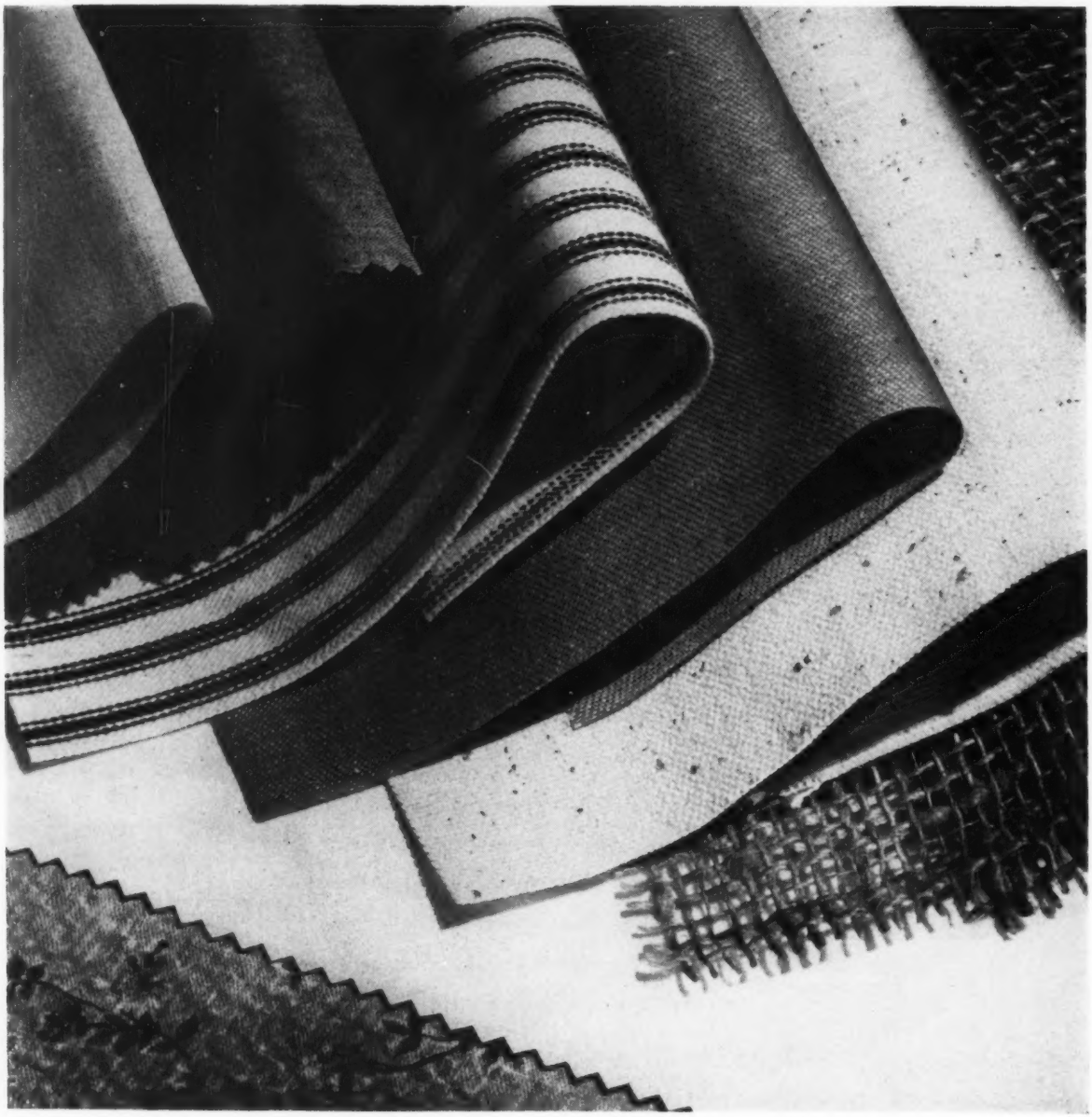
You'll see Lurex for every smart end use, from automobile upholstery to sheer negligee fabrics. Lurex in jewel colors, porcelain colors and multi-colors, as well as the familiar metallic tones; superfine 1/100" Lurex; supported and non-supported Lurex, along with our newly-developed Lurex staple.

You'll see how the new cone and one-pound put-ups can increase your mill efficiency, how successfully Lurex combines with other fibers, the ease with which it handles on standard mill equipment. You'll see why—wherever there's fashion, there's Lurex today.

Lurex, non-tarnishing metallic yarn, made only by The Yarn Division of The Dobeckmun Company.

The Dobeckmun Company, Cleveland 1, Ohio • New York: 350 Fifth Avenue

Boston: *43 Leon St.* • Charlotte, N. C.: *510 West 4th St.* • Philadelphia: *1801 W. Cheltenham Ave.* • Chicago: *330 S. Wells St.*



UNIFORM FINISHING with GLOBE® starches and gums

Your fabric finishing problems are reduced when you use finishing sizes made with Globe Brand Starches and Gums. These products are manufactured to exacting specifications. Globe Brand Starches and Gums have greater uniformity and stability of viscosity, enabling the mill to maintain high finishing standards at minimum cost. Quick deliveries of Globe products can be made to any plant location.

Our research staff is constantly at work developing superior finishing products especially for your needs.

We welcome an opportunity to help you with specific production problems. There is no cost or obligation. Write today.

GLOBE BRAND

STARCHES
GUMS AND
DEXTRINES

CORN PRODUCTS REFINING COMPANY • 17 Battery Place, New York 4, N. Y.

HERE hosiery at Berkshire Knitting Mills is checked carefully. Stainless Steel boxes at each examiner's right holds hosiery awaiting inspection. Small, curved Stainless tables in front of the examiners hold hosiery during inspection. At the examiner's left is the ring which holds the inspected hosiery bag, the counter lever and guard—all Stainless Steel. Inset gives a closer view of this equipment.

STAINLESS STEEL FLOOR trucks are used to transport nylon hose between departments at Berkshire Knitting Mills.

STAINLESS STEEL'S SMOOTH SURFACE

aids *"quality control"* at Berkshire Knitting Mills

THE sheer hosiery that women prefer today demands the most careful handling in the knitting mill. Many companies have found they can best protect the product – and reduce maintenance costs, too—through extensive use of Stainless Steel equipment.

Berkshire Knitting Mills, Wyomissing, Pa., one of the largest manufacturers of full-fashion nylon hosiery, takes advantage of the smooth, non-snagging surface of Stainless Steel in special equipment in the Knitting, Finishing and Inspection Departments.

Work tables at the knitting machines now have Stainless Steel tops. Material formerly used was susceptible to chipping and cracking, but since the Stainless tops have been in use the product is safe from damage.

At the Inspection stations, the holding box, work table, ring, counter lever and shield—all potential danger spots—are Stainless Steel. Not only is much of the danger of snagging eliminated, but maintenance costs are much lower than when these units had painted surfaces.

The floor trucks used to transport hosiery between departments are Stainless Steel. When wooden trucks were used, it took the constant attention of one or two men to keep them snag-free, but now these men can be used on other jobs around the plant.

Stainless Steel's smooth, non-snagging surface, by itself, will often justify the use of Stainless mill equipment—but you get far more. You get a material with superior resistance to corrosion, ease of cleaning, long life, no color carryover when used in dyeing, and many other advantages. Use it wherever you can, and be sure it's perfected, service-tested U·S·S Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
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U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS USS PIPE · TUBES · WIRE · SPECIAL SECTIONS

UNITED STATES STEEL

HERR

See these new rings at the Southern Textile Exposition Booth 262

For
WORSTEDS
WOOLENS
COTTONS
SYNTHETICS
BLENDS

Special Herr Conical Ring permits higher speed — compensates for variations in tension — prevents yarn breakage — keeps yarn clean — smooth — uniform. No rewicking required. You'll also need Herr Lightweight Flyers to give you light tensions at profitable high speeds on all stretch nylon, crepe and Helanca yarns.

Please send us your literature.

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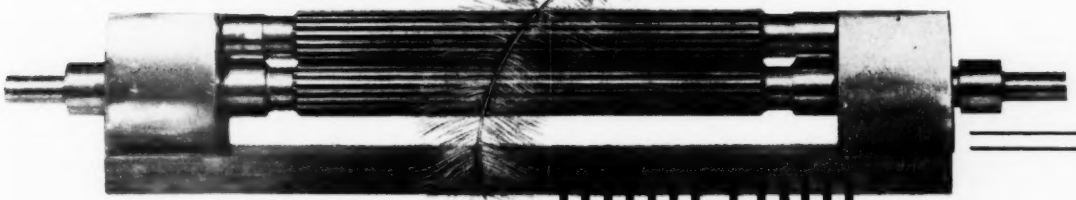
HERR
MANUFACTURING CO., INC.
309 Franklin Street, Buffalo 2, New York

Feathertouch



DRAFTING

. . . The Key To Good Yarn

You cannot correct an error made in the drawing process. A few yards of defective drawing sliver show up in thousands of yards of irregular yarn.

Ideal High Speed Drawing Rolls* have set new high standards in the production of stronger and more uniform drawing sliver. Their free-floating top rolls give only a light feathertouch to the stock, evening-out thick and thin places in the roving. Patented construction prevents crushing, bruising, or cutting of fibres, and keeps rolls perfectly aligned at all times. Ideal Drawing gives you far higher quality sliver than you can produce on any other equipment.

Ideal Drawing also gives you greatly increased production per frame . . . at lower cost for production and maintenance labor, with less power, a considerable saving in floor space, and with less original investment. Investigate Ideal's many advantages today, and let us prove our claims in our pilot plant or in your mill.

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

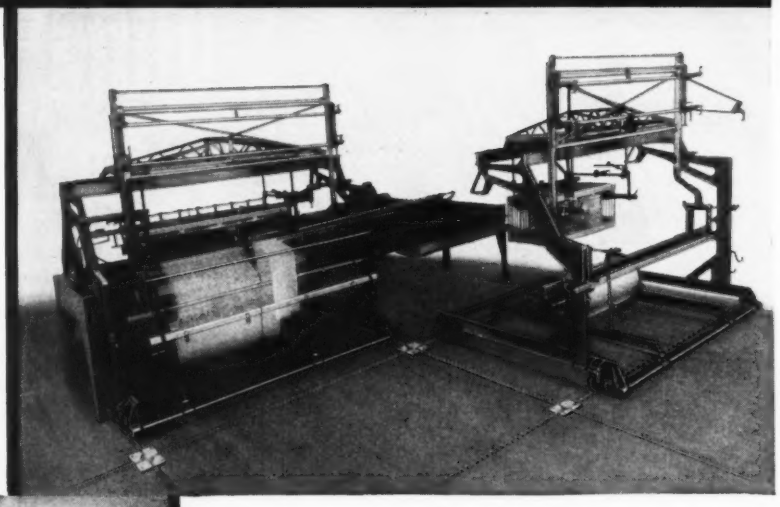
Ideal Industries, Inc.
Bessemer City, N. C.

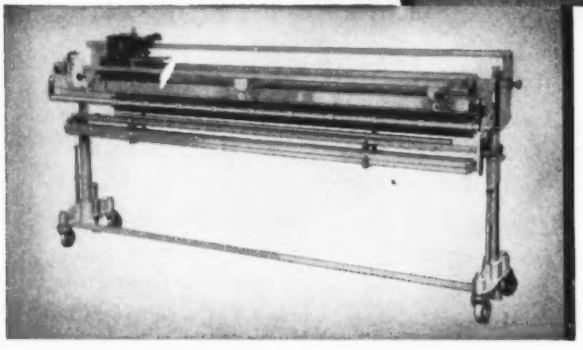
On Display
Booth 238 and 239
Southern Textile Exposition

See BARBER-COLMAN at the SOUTHERN TEXTILE EXPOSITION

WARP DRAWING MACHINES

This interesting machine is typical of a number now available to handle a wide variety of work. It will be demonstrated on a complicated stripe beam warp. Reports from all over the world indicate substantial savings that can be obtained from use of these machines.





WARP TYING MACHINES

Here you will find a great improvement in the method of tying-in new warps *at the loom.* This machine, made in 46″, 56″, and 66″ lengths (or longer to order), ties-in full width warps in a single operation and has a removable knotter unit. Three models are available for a variety of work.

BARBER COLMAN

18th SOUTHERN TEXTILE EXPOSITION GREENVILLE, S.C.

OCTOBER 4th-8th

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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Arlind Corporation
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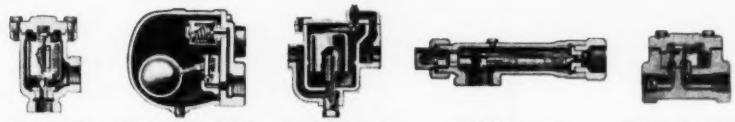
SARCO

A complete line of steam traps, temperature controls & heating specialties

Here are a few

STEAM TRAPS



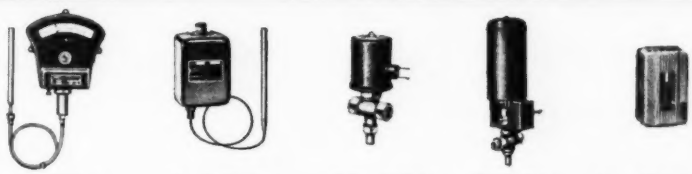
Thermostatic | Float-Thermostatic | Camlift Bucket | Liquid Expansion | Thermodynamic

The right trap for each job . . . Only Sarco offers 5 functionally **different** types — not **variations** of one type!

TEMPERATURE CONTROLLERS

Heating | Cooling | Heating or Cooling | Air Temperature

ELECTRIC-THERMOSTATS AND VALVES



Indicating | Non-Indicating | Solenoid Valve | Motor Valve | Room Thermostat

AIR ELIMINATORS AND STRAINERS

Air Eliminators | Strainers | Scraper Strainers

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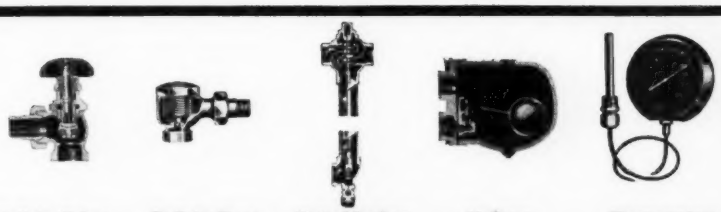


Radiator Valves | Radiator Traps | Water Blenders | Air Traps | Thermometers

BULLETINS

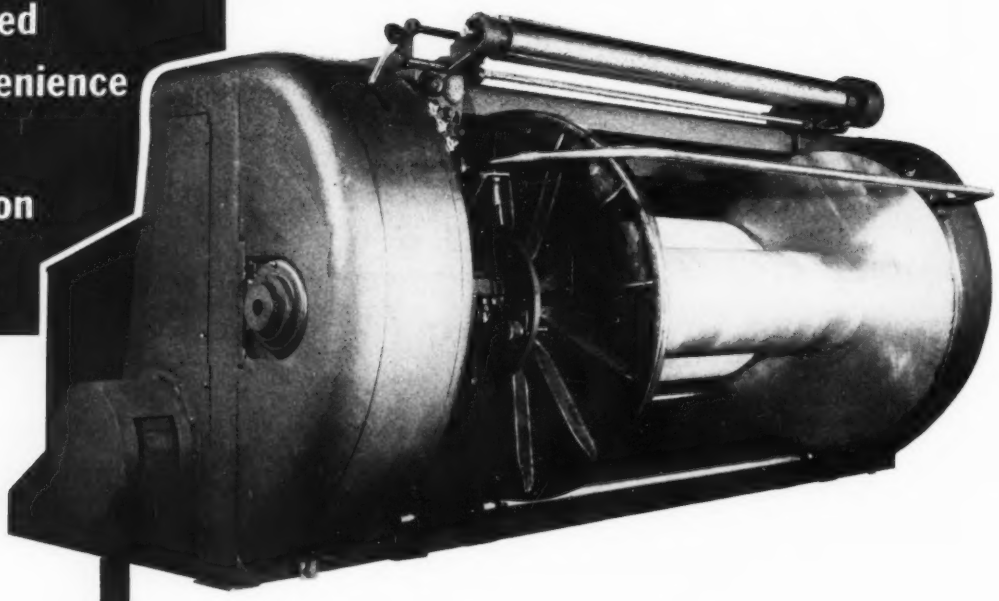
Send us data concerning your installation; we'll gladly send you bulletins and case histories. Sarco Company, Inc., Empire State Bldg., N. Y. 1, N. Y.

SARCO SAVES STEAM

2071-B

For more information, write direct or use Reader Service post card.

Unmatched for Convenience Quality Production



Cocker High Speed Warper for Cotton

Shown here is the 1954 model Cocker Cotton Warper . . . a fitting successor to the other fine Cocker Cotton Warpers which have set the pace for decades.

For Convenience: This warper has patented Air Doffing, patented differential constant yarn speed control, rheostat control to attain any desired operating speed, gradual acceleration from crawl to operating speeds, and individual braking of beam pressure roll and carrier roll by means of rheostat control.

For Quality: Spindle driven driving from *both ends* of beam to assure even distribution of load in starting and stopping, and control of density of yarn on beam at all times by means of air operated pressure roll. This Cocker Cotton Warper has no equal in the smoothness of its operation.

In Production: This new Cocker Cotton Warper is practically vibrationless at speeds up to 1000 yards per minute. It is made to take beam flange diameters up to 40 inches.

Pre-determining Counter Clocks, Electric Speed Indicators, and Combs are standard equipment on this and all other Cocker Warpers.

Write or wire for full information.

THE LEADER
COCKER
AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

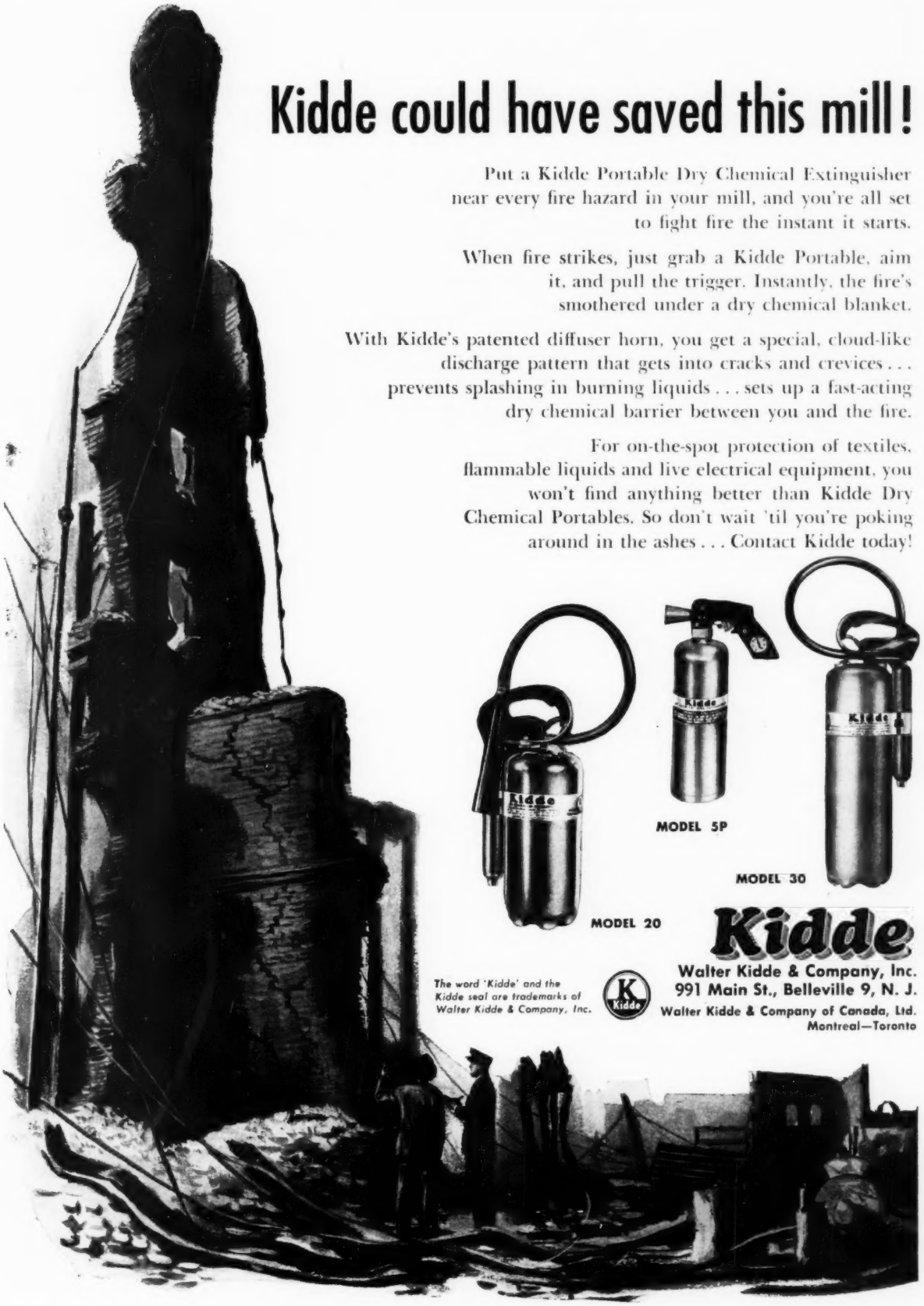
Kidde could have saved this mill!

Put a Kidde Portable Dry Chemical Extinguisher near every fire hazard in your mill, and you're all set to fight fire the instant it starts.

When fire strikes, just grab a Kidde Portable, aim it, and pull the trigger. Instantly, the fire's smothered under a dry chemical blanket.

With Kidde's patented diffuser horn, you get a special, cloud-like discharge pattern that gets into cracks and crevices . . . prevents splashing in burning liquids . . . sets up a fast-acting dry chemical barrier between you and the fire.

For on-the-spot protection of textiles, flammable liquids and live electrical equipment, you won't find anything better than Kidde Dry Chemical Portables. So don't wait 'til you're poking around in the ashes . . . Contact Kidde today!



MODEL 5P

MODEL 30

MODEL 20

Kidde

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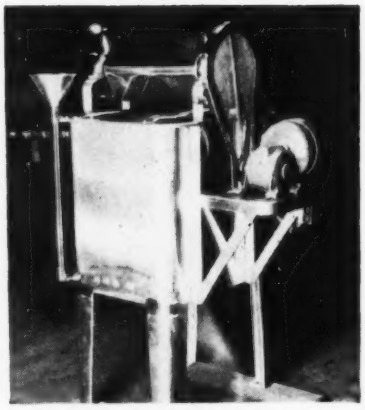
SECTION 113 **FIRST FLOOR**



- **Stainless Steel Dry Cans**
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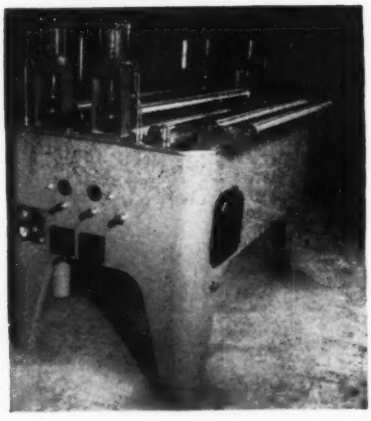

Designers and Manufacturers of Textile Metal Products

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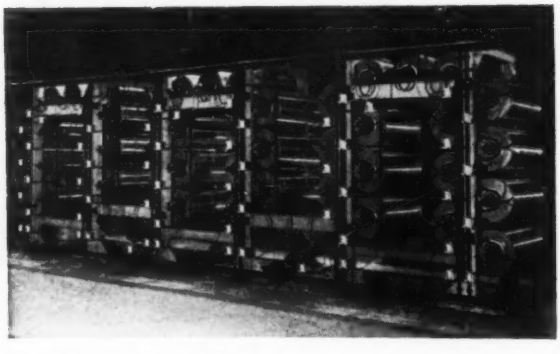
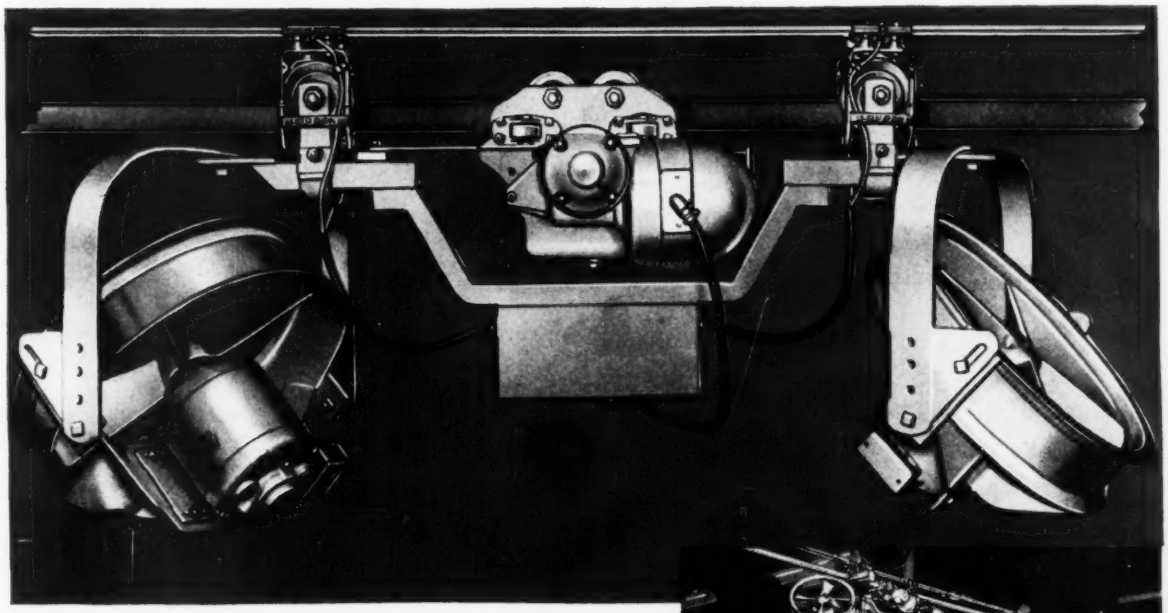
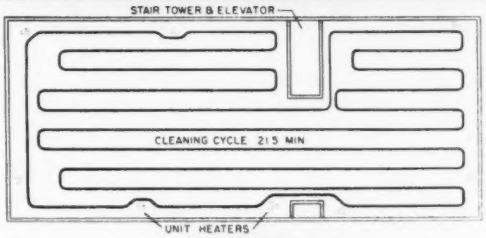


the Louden Automatic TWIN-FAN CEILING CLEANER



KEEPS MILL CEILINGS CLEAN AND LINT-FREE

The Louden Twin-Fan Cleaner is proving a boon to more and more mills . . . because it keeps their ceilings *continuously* clean, *continuously* free of lint. The twin fans sweep both sides of the track simultaneously. Each fan is independently adjustable and can be pointed in any direction, thus meeting the special needs of your room. It cleans without disturbing machine processes going on below. The threat of "gouts" or "slubs" is eliminated, together with the need for manual blowing down, or ladder climbing to adjust stationary fans. There are no dead air pockets; humidity is even throughout. Automatic shut-off and turn-on for passage through areas where blowing is not needed is one of the features available. And you can be sure of highest dependability, efficiency and economy because of Louden's long experience in building Monorail Equipment of every type. Let a Louden engineering representative tell you more, what it will cost, what you will save. Your inquiry will receive prompt attention.



See the Louden Twin-Fan Ceiling Cleaner in operation at the Southern Textile Exposition, Booth 704, Annex No. 3.

THE LOUDEN MACHINERY COMPANY
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DU PONT

PROPERTY AND APPLICATION DATA ON THESE VERSATILE ENGINEERING MATERIALS: "ZYTEL," "ALATHON," "TEFLON," "LUCITE."

NEWS

NO. 3 — 1954

Eliminate Breakage, Warping, Reduce Wear with Quills Molded of Du Pont "Zytel"* Nylon Resin

Bearings of Du Pont TEFLON® require no lubrication

Bearings of Du Pont "Teflon" are receiving increasing attention in design applications. Be sure to investigate the unusual qualities of this engineering resin material when designing textile equipment.

"Teflon" tetrafluoroethylene resin has a coefficient of friction lower than that of any other engineering resin material. This low coefficient is not affected by temperatures even up to 500° F and is virtually independent of load.

Here's an important point for textile machinery designers: because bearings made of "Teflon" are self-lubricating, the use of these bearings eliminates oil splatter on yarn or cloth. In addition to this property of self-lubrication, "Teflon" offers these many *other* advantages to the textile industry:

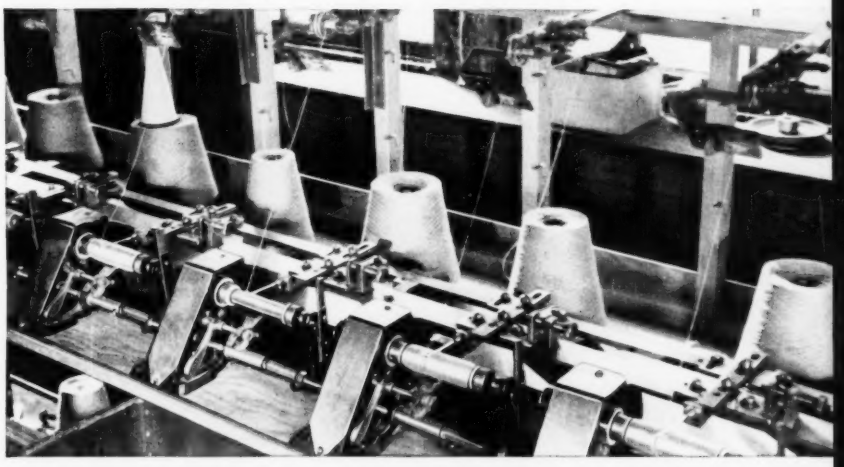
"Teflon" has good impact strength, and is tough and flexible over a wide temperature range — down to —450°F, up to 500°F.

Water absorption of "Teflon" is zero, by ASTM test D570-42.

"Teflon" will not crack, swell or shrink. It is inert to every chemical and solvent normally encountered in industry.

Write for further facts and design experiences involving "Teflon" tetrafluoroethylene resin. (See coupon on reverse side.)

Dependable quills of "Zytel" nylon resin help cut costs



Quills molded of "Zytel" nylon resin on fiber-winding machines at Murdock Webbing Company.

The foreman of the Murdock Webbing Company, Central Falls, R. I. was dissatisfied with old-style quills. They warped, they split and chipped. Power-driven nubs used for winding wore the holes out of round in wooden quills, resulting in uneven winding. Worse yet, these quills tended to break under tension of the fiber wound on them.

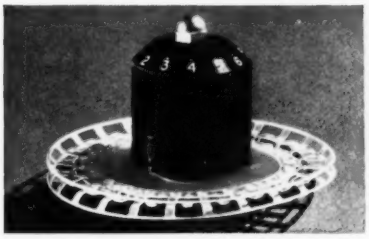
Knowing something of the unusual properties of Du Pont "Zytel" nylon resin, the foreman consulted with the Plastic Mold and Engineering Company, of Providence, for advice in developing wear-resistant quills made of this unique engineering material.

Quills were developed and molded of "Zytel" in a wide variety of sizes. One such quill is shown in cutaway view in the photograph. The quills are injection molded about an aluminum hub

(*Continued on reverse side, col. 1*)

Du Pont "Zytel" nylon resin useful for complex textile machinery parts

Because it can be molded economically into intricate shapes, without losing strength in thin sections, "Zytel" nylon resin finds a thousand and one uses in textile machinery.



Tension is exerted by magnetic force on this pulley molded of Du Pont "Zytel", and in turn on the yarn that passes around it.

Above is an illustrated example. The picture shows a yarn-tension brake pulley of complex design, injection-molded of "Zytel."

(*Continued on reverse side, col. 2*)

OVER

*"Zytel" is the new trade-mark for Du Pont nylon resin.

DU PONT

PROPERTY AND APPLICATION DATA ON THESE VERSATILE ENGINEERING MATERIALS: "ZYTEL," "ALATHON," "TEFLON," "LUCITE."

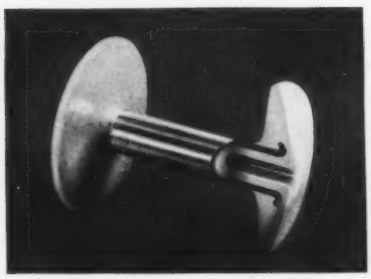
NEWS

NO. 3 — 1954

Quills of Du Pont "Zytel" (continued)

which assures rigidity.

These new quills do not wear out of round at the nub ends. They do not crack and snag the fiber. They do not break under tension set up by winding fibers on them.



One of several sizes of quills of "Zytel" developed by the Plastic Mold and Engineering Company. Note aluminum hub with flared ends, plus molded "Zytel" inside and out.

Nor are the quills of Du Pont "Zytel" nylon resin affected by operating temperatures or humidity. They are mass produced economically by injection molding.

In the weaving operation, where

Quills of Du Pont "Zytel" do not crack and snag the fiber, and virtually eliminate breakage.

fiber is unwound from them, the quills perform advantageously. The operator has no difficulty installing new, full quills without interrupting operations, as these sturdy quills of "Zytel" do not wear out of round or crack and snag the fiber.

As "Zytel" nylon resin has helped Murdock, it may help you. Write today for more information on the use of Du Pont "Zytel" in the textile industry, or use the coupon below.

Parts molded of "Zytel" (cont.)

The pulley has proved its durability under tension. It has demonstrated its resiliency, its thin-section strength, its ability to bounce back to its original shape even after appreciable deformation. Evaluate this useful material which needs little or no lubrication.

Investigate Du Pont engineering materials in your product development programs

One of the family of these versatile engineering materials is often a key factor in product improvement or new product design.

The wide range of properties available with "Alathon"* polyethylene resin, "Lucite"* acrylic resin, "Teflon"* tetrafluoroethylene resin, and "Zytel"† nylon resin are helping solve industrial design problems.

NEED MORE INFORMATION?

Clip the coupon for additional data on the properties and applications of these Du Pont engineering materials.

E. I. DU PONT DE NEMOURS & CO. (INC.)
Polychemicals Department
Room 189, Du Pont Building, Wilmington 98, Delaware

Please send me more information on the Du Pont engineering materials checked: ☐ *"Zytel";* ☐ *"Alathon";* ☐ *"Teflon";* ☐ *"Lucite". I am interested in evaluating these materials for*

NAME _____ TITLE _____

COMPANY _____

STREET ADDRESS _____

CITY _____ STATE _____

TYPE OF BUSINESS _____

*"Alathon", "Lucite", "Teflon" are registered trade-marks of E. I. du Pont de Nemours & Co. (Inc.)
†"Zytel" is the new trade-mark for Du Pont nylon resin.

POINTERS ON PROCESSING

Injection molding is efficient and economical

Injection molding, as a method of mass-producing parts made of Du Pont engineering resin materials, has been developed mainly within the past ten or fifteen years. And new improved techniques have accompanied that development.

Injection molding offers the advantages of close tolerances, high production rates, low unit cost, and usually does away with finishing operations. One important saving which has been effected by injection molding occurs when the molded piece replaces an assembly of two, three or more parts.

HIGH PRODUCTION RATE. Multi-cavity dies have been made which produce hundreds of identical pieces at a time. Molding time and cycle vary, of course, with the size of the part and its shape. The injection molding process is versatile, and is used to produce a wide variety of quality parts, rapidly and economically.

LOW UNIT COST. Another positive value of precision injection-molded parts is the low cost of fabrication per part. While the initial cost of the mold itself may be high, a mass-production operation makes the cost per piece low. Loss of molding material is generally low too.

NO FINISHING OPERATIONS. With good molding techniques, pieces can be injection-molded to close tolerances. In many cases, molded pieces require no finishing operations. Thus, large savings in time and expense can often be realized.

SIMPLIFIED DESIGNS. The versatility of injection molding often permits design simplification. Du Pont "Zytel" nylon resin, for example, can be injection-molded into intricate shapes, as well as around metal inserts. Du Pont "Alathon" polyethylene resin and "Lucite" acrylic resin can also be successfully injection-molded into a variety of useful forms. For more information about Du Pont engineering resin materials and how they are being used in industry, clip the coupon.

Knitting Taslan

CONTINUED FROM PAGE 73

The inspector sends socks to the preboarder in 18-doz. lots. The Paramount preboarding machines are set for a temperature of 230° F.

All machines are set the same, and they are checked each week with a thermometer, because a varying preboarding temperature gives varying dyeing results.

A mark on the preboarding forms, plus constant size checks in the knitting room, helps the preboarder keep sock lengths constant. The preboarded socks are placed in bags in 3-doz. lots for dyeing. Nylon and Dynel dye bags have replaced the cotton bags to prevent lint from soiling the nylon socks.

Socks knitted from Taslan yarn require less dye than socks knitted from other nylon yarns.

Multimotor Slasher Drives

CONTINUED FROM PAGE 107

tension. This means that the horsepower input to the beam should remain the same throughout the build-up of the beam.

To keep the horsepower input constant, the motor-armature current is controlled. Then, since at a given yarn speed the armature voltage is fixed, constant current will produce constant input power.

Booster Overcomes Friction

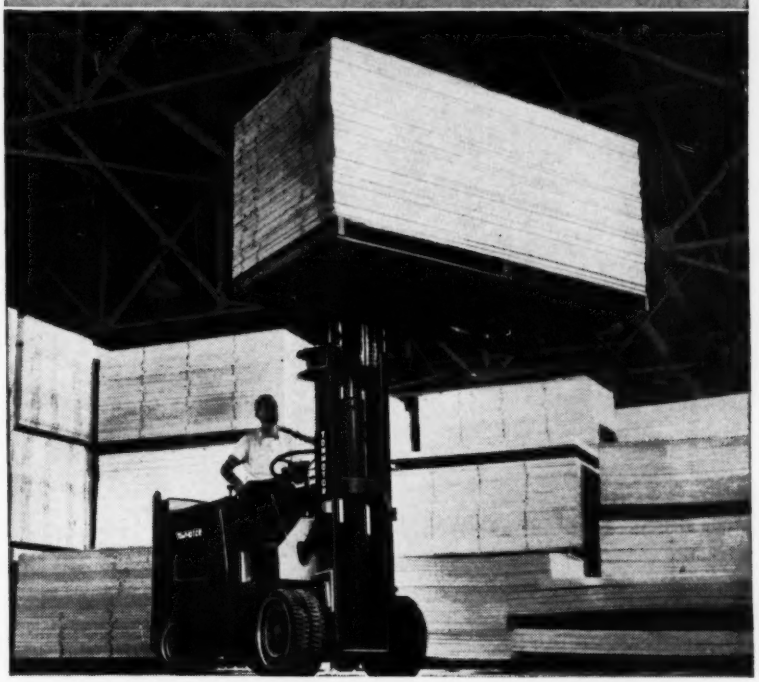
A magnetic-amplifier type of current regulator is used to control the input to the motor by regulating the armature current to a preselected value. The magamp excites the field of the motor and adjusts it as required to maintain the armature current at the preselected value. The magamp current serves two purposes:

1. Regulating for current
2. Automatically controlling the motor field as required for build-up

The constant power input to the motor must be modified to compensate for losses in the drive and mechanical system. The losses that tend to upset the constant tension characteristic are friction and windage in the motor and friction in mechanical transmission equipment such as gears, chains, sprockets, and bearings.

The portion of these losses proportional to motor output is harmless, but the losses that increase with speed require compensation. This compensation is provided by a small booster generator in the armature circuit of the beam motor. It is controlled by the same magamp regulator that controls the motor field, and the action is just as automatic. The amount of booster control is adjustable to suit the par-

LEASE-A-TOWMOTOR



Get Lower Handling Costs
. . . without capital investment!

In addition to regular terms, you can also get prompt delivery of new Towmotor equipment without a cash outlay.

"Lease-A-Towmotor" Plan

The "Lease-A-Towmotor" Plan requires no capital investment and only a small monthly rental payment. Towmotor users report savings of up to 60% over old handling methods. Advantages include—

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(b) Greater handling economies with modern Towmotor equipment. Your business will enjoy the competitive advantages of lower costs.

You have a choice of a 3 or 5-year lease. Monthly payments are graduated downward over the 3-year period and are proportionately lower over the 5-year period.

TOWMOTOR Time Payment Plan. You can also buy your Towmotor material handling equipment spreading the cost over 6 to 36 months. No outside financing necessary. Towmotor handles complete arrangements. Minimum down payment.

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SINCE 1919

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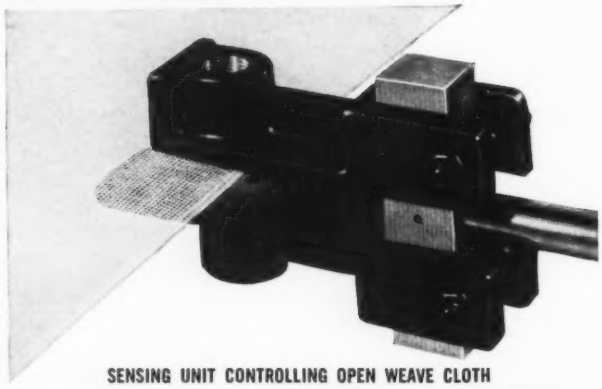
Nothing touches the cloth but a breath of air



SENSING UNIT CONTROLLING OPEN WEAVE CLOTH

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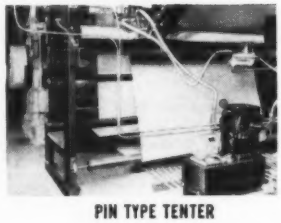

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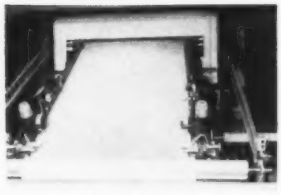

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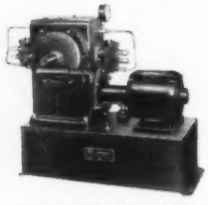

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ASKANIA REGULATOR COMPANY
272 E. Ontario Street, Chicago, Illinois
Subsidiary of General Precision Equipment Corp.

ticular requirements of the individual slasher beam, and it amounts to a maximum range of about 30 v. The voltage of the motor is 230.

The booster also compensates for I.R. drop in the beam-motor circuit to improve the ability to accelerate at low speed. In addition, the booster keeps the beam-motor circuit in step with the rest of the slasher.

Magamp Works This Way

In its simplest form, the magamp regulator is a control device in which the passage of alternating current through the windings of reactors is controlled by the degree of magnetic saturation of the reactors. These reactors are similar to transformers in construction in that they have a number of insulated windings on a magnetic core. The reactors allow only a small exciting current to flow unless they are saturated. They could be saturated by applying an excess of a.c. voltage to obtain a high exciting current. When the cores of the reactors are saturated with direct current in a control winding, the a.c. winding will pass larger currents.

A magamp circuit is composed of a.c. windings, reference and current windings, and self-energizing winding. The windings are separated on two cores.

A selenium-type metal rectifier is connected in series with each a.c. winding to block the flow of current during the half cycle the d.c. and a.c. ampere turns are in opposition to each other. The two reactors and rectifier work together to permit the passage of both half cycles of the a.c. supply; one half cycle passes through each leg.

This rectifier is known as a self-saturating rectifier because it allows current to flow through the reactor in only one direction; the resultant direct current is in the direction to help saturate the reactor and reduce the amount of externally applied d.c. excitation required to obtain a given load current.

The output of the magnetic amplifier is rectified by a selenium-type metallic rectifier and is applied to the fields of the beam motor and beam booster to control them.

The magamp is essentially a simple regulator that controls the beam-motor current. Several windings are wound on the reactor cores for control purposes. The reference winding is excited with the value of the d.c. current corresponding to the magnitude of the desired beam-motor current. The potentiometer adjusts this control.

A second winding, the current winding, carries a portion of the armature current; and the ampere turns in the

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For your convenience, Lauramine #20, modified anionic softener, now comes in two forms — paste or liquid. It is fast dissolving, easy to use, compatible with starches and most finishing compounds. Uniform application and lubrication are assured.

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current winding oppose the turns in the reference winding.

If the current is not as great as called for by the reference winding, the net control ampere turns are reduced, the a.c. current is reduced, and the output of the magamp is reduced. Consequently, the motor field is weakened; and more armature current is produced.

If the current is too high, the ampere turns in the current winding are greater than those in the reference winding; and the magamp output is increased. As a result, the motor field is strengthened; and the armature current is reduced. Process continues throughout the building of the beam.

The self-saturating rectifier units need further help in reducing the required d.c. ampere turns to control the magamp output. A self-energizing winding is used to increase this effect and obtain a further increase in gain. The self-energizing winding is connected in the output circuit of the magamp. A resistor provides tuning adjustment.

Old Principles Are Used

The magamp control is similar to the Rototrol slasher system in that the same control windings are present, and the tuning adjustments are essentially the same.

Antihunt and inertia-compensating windings are also supplied.

The magnetic amplifier is completely static. It has no moving parts or components to require replacement. Its performance does not suffer from lack of maintenance because it requires none.

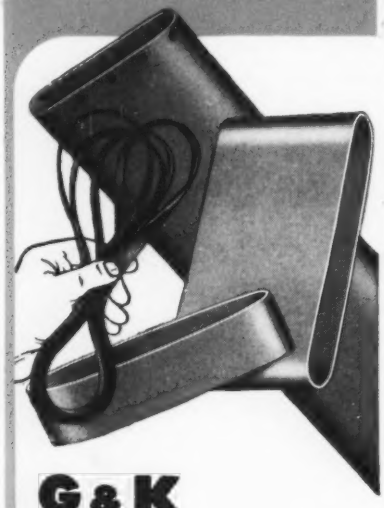
All the components of the magamp are panel mounted and are convenient for packaged construction. The construction and assembly of the motor-generator sets and control equipment make a compact, convenient package that takes up a minimum of floor space and yet is fully accessible for maintenance of machines and magnetic control.

The main motor generator set is mounted in the bottom of the cabinet. The booster generator is mounted immediately above it. The control compartment containing the magnetic relay and contactor panel and the motor-operated accelerating rheostat are just above the booster generator. The selenium-rectifier exciter panel and magnetic-amplifier panel are in the top row.

The cabinet was made tall to keep the other dimensions small for accessibility. Height is usually no problem, because there is nearly always enough head room where the cabinet is located for a man to stand.

Assembly, wiring, and testing of the

the helping hand to better roving



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FREE CATALOG: Shows the great Orange Line of Aprons and Tapes — also Textile Leathers for weaving.

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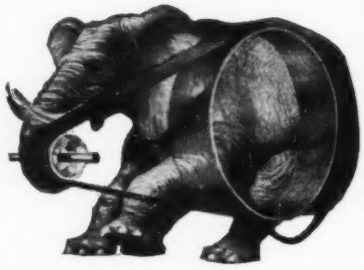
TEXTILE LEATHERS

PULLINGRIP



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Leather Belting grips the pulleys for more production-power

It Grips — Like an elephant's trunk, leather's resilient, frictional surface *grips* the pulley face, causing belt and pulley to move as one power unit.

It Pulls — Leather is strong, flexible, with controlled stretch—gives peak performance on *any* drive.

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Call your G&K Industrial Supplies Distributor for flat, round, link and V-belting, belt lacing, dressings, cements, packings and specialty leathers . . . made by Graton & Knight, the world's largest manufacturer of industrial leather products.

Catalog 101 shows RESEARCH®, HEART OAK and SPARTAN® Leather Belting — also special belting for Stripper, Spindle and Universal Winders. It's free.

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LEATHER BELTING

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The Bell Company is another of the many leading textile firms that specify Swift's soap for their scouring needs. They know that the name Swift in soap is backed by years of specialized experience and that Swift's soap products are readily available from 375 locations throughout the U. S. and Canada.

Yes, there is a Swift's Soap for your textile needs and a Swift's distributor near you . . . so, the next time you need soap — Call Swift for service and dependability.

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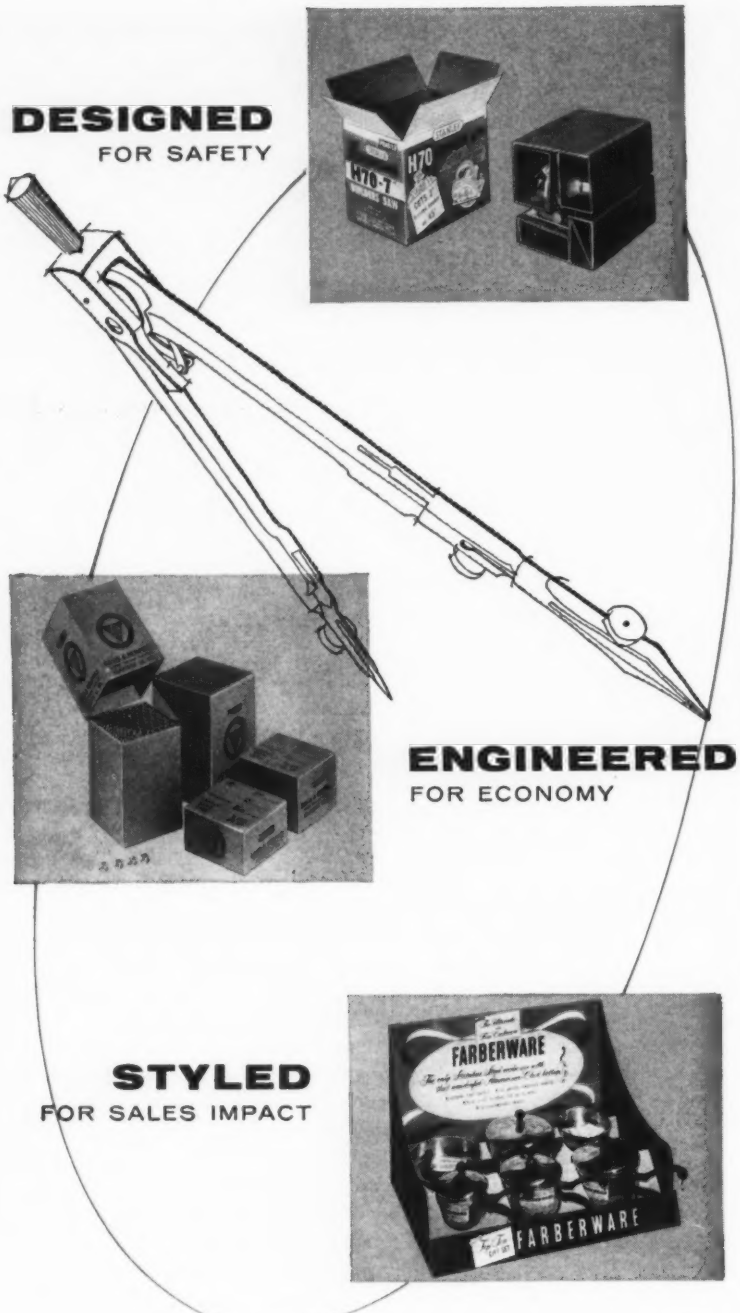

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packaged power and control unit are completed at the factory. The wiring between units at installation is cut to a minimum and results in a saving in installation time and expense.

Magnetic Latch Opener

CONTINUED FROM PAGE 92

suit strength requirements. The magnet is operated from a 12-v. circuit. This circuit is not a part of the stop-motion circuit.

The transformer for the latch-opener circuit is fixed to the take-up guard. A selenium rectifier, also fixed to the guard, converts the current from the transformer to direct current to provide a steady current to the magnet.

The magnet is fixed between No. 4 and No. 5 feeds opposite the needles where they rise from the No. 4 stitch cam.

Pattern Chain Controls Magnet

The magnet is active only for one revolution of the machine. Two pegs on the pattern chain control a mercury switch to supply the current to the magnet.

The magnet partly opens the latches on the needles that have cast off their loops. The yarn carrier on No. 5 feed completes the opening of the latches.

A safety feature has been provided to prevent the magnet from overheating if the machine stops in the press-off course. A mercury switch is pivoted on the knock-off lever. This switch is connected to the mercury switch at the pattern chain. If the machine stops in the press-off course, the magnet circuit is broken.

How Garments Are Made

To prevent stitches from running down the cloth after the cast-off courses, a series of tuck-and-knit courses alternated with all-knit courses are made before the cast-off course.

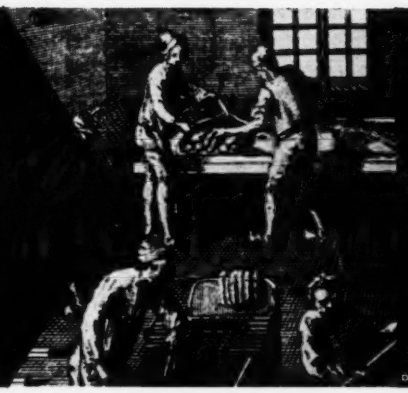
The separating cotton thread is fed to all needles on Feed No. 2. Alternate stitches are cast off at Feed No. 4 by removing all yarn fingers from action, tucking on odd needles, and sending the even needles to the knitting height.

The smooth, firm selvage edge is made with three ends of 100-cut rubber. The cuff is made by feeding rubber yarn to every third feed. These feeds tuck even needles and welt odd needles to lay in the rubber.

As each garment is completed, it is recorded on a mechanical counter. A high link on the pattern chain moves a lever on the counter, which is fixed to the pattern-drum assembly.

Picture of a dyehouse before Pfister **NAPHTHOLS**

In the 1700's, when a dyeing establishment looked like this, a formula for scarlet read like this:



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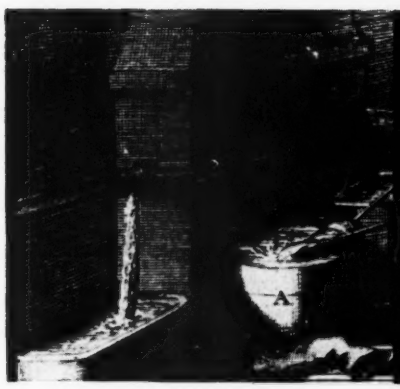
For 7 pounds of cloth –

1 lb. aquafortis duplex
1 oz. salamoniac
½ oz. salnitre
3 oz. granulated tin
3 lb. wheat bran
1½ oz. creamtarter
2 oz. cochineal
2 Tbsp. tumeric
water



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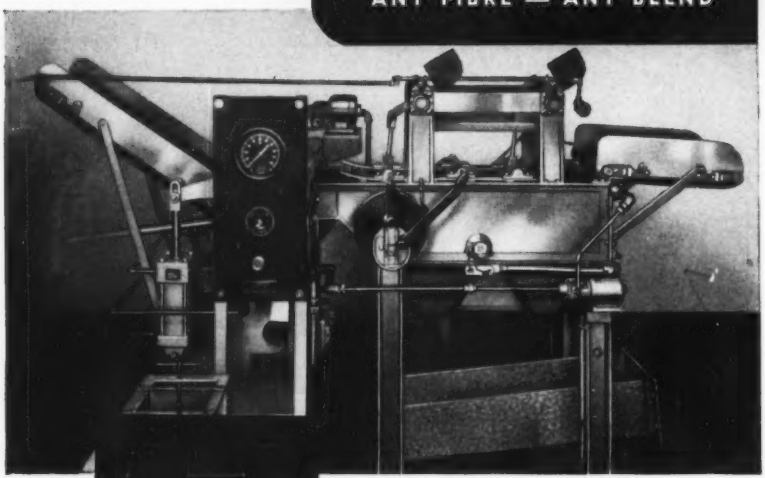

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Tinting Fibers

CONTINUED FROM PAGE 69

advantage of tinted stocks is that they permit visual detection of mixed lots at any point in process without special apparatus. Both fluorescence and radioactivity are considerably more difficult than tinting, from an operational standpoint.

While pleasant characteristic odors might be useful in special cases and would no doubt boost mill morale generally, their utility is probably confined to identification of yarn packages; and even here odors may be questionable.

Five Complicating Factors

While the development of tints that are fugitive on all fibers may not be impossible, the task is far from easy. Some of the complicating factors are the following:

1. *Chemical nature of dyes.* Most commercial dyestuffs are not pure chemical compounds. Many are complex mixtures, and even the simplest dyes are rarely pure. Practically all colors are standardized to give identical dyeing characteristics from batch to batch, and this result is accomplished by mixing the dyestuff with salt and sometimes with small amounts of different dyes for shading. Standardizing materials are no hindrance in dyeing and may actually be helpful, but they are usually quite undesirable in dyes that are to be used as tints. The purification of commercial dyestuffs for use as tints is expensive and requires a high degree of technical proficiency. Tint suppliers, therefore, have been understandably reluctant to engage in special purification of dyes for tinting purposes.

2. *Chemical nature of fibers.* The chemical make-up of both the dyestuff and the fiber play very important roles in determining fugitivity. It is hard to find good tints for fibers that contain several types of chemical groupings; such fibers are likely to have some affinity for practically all dyestuffs, and even light staining is highly objectionable where fabrics are to be dyed in pastel shades.

3. *Spin finishes.* To promote easy processing, spin finishes are always applied to synthetic fibers during their manufacture. Because these finishes are often surface active, they may act as dyeing assistants when tints are applied to the stock, even where the color has no particular affinity for the fiber.

4. *Effect of heat.* Of all mill hazards, heating, particularly in the presence of moisture, is the most dangerous to the fugitivity of tints. Steaming, conditioning, crabbing, and heat

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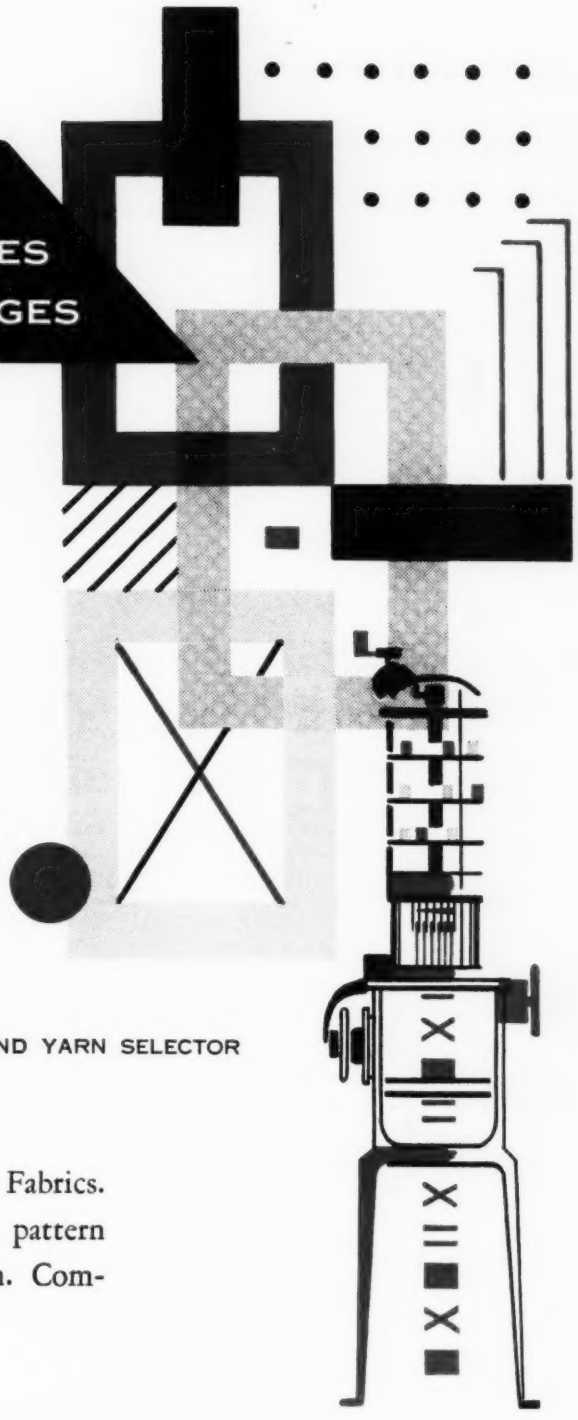

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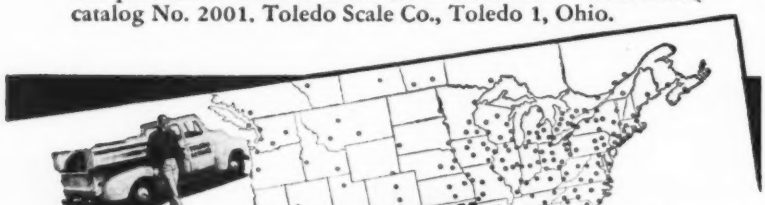

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setting are often the source of untold grief when it comes to tint removal. Under the influence of heat and moisture, even dyestuffs that have little chemical affinity for fibers can often be set so firmly that removal in finishing is impossible.

5. *Effect of Time.* Everyone who has worked with the problems of developing or selecting fugitive tints has had experience with colors that perform beautifully in the laboratory and poorly in the mill even though there has been no steaming. In many cases, this deterioration in fugitivity seems to be related to the length of time that the color has been in contact with the fiber. If one applies the tint on Wednesday in the laboratory and scours it on Thursday, there is frequently no trouble; but where the stock is tinted on the first of September and the fabric is not finished until November, the same color may become firmly fixed.

Tinting of Blends

From the foregoing, it is not hard to understand why the problem of tinting blends is such a difficult one; and it is in this area that the most pressing need for fugitive colors exists today.

The use of colors that do not have good fugitivity on all the blend components is a risky business, even if they are applied before blending to the fiber on which fugitivity is good. Color is often transferred in the process of blending, and if the dye is capable of being set on one or more of the blend constituents, one can be pessimistically sure of finishing complaints.

The only satisfactory answer to the blend-tinting problem appears to be the selection of colors that will not stain any of the components. This is a great challenge to the tint manufacturer, who is now faced with the necessity of developing the universal color line if he is to satisfy all of the demands of mills that run blends.

How To Minimize Tint Trouble

Because of the complexity of the problem, it is not likely that tinting colors can ever be improved to the point where they can be applied to any and all types of fiber without some risk. The synthesis of new colors, specifically designed for tinting, will do much to improve the situation; but it will probably never be possible for the tint supplier to guarantee fugitivity under all conditions. The following suggestions may be of some help, however, to those interested in reducing tint complaints in finishing:

1. After laboratory evaluation, check all colors in the mill on small lots of

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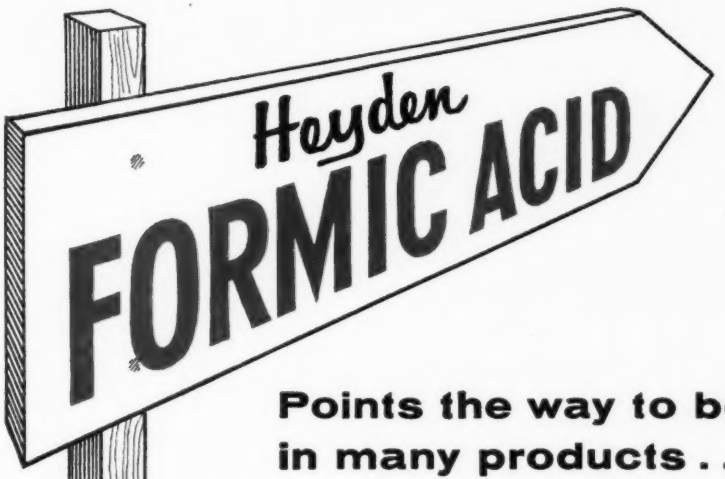

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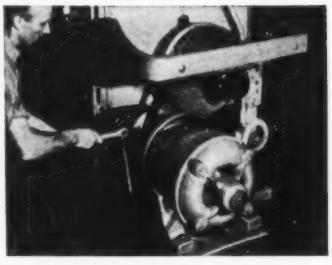

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fiber or blends to be sure that fugitivity is the same under plant conditions as it was in the laboratory.

2. Use the minimum amount of tint necessary for adequate identification. This amount will depend to some extent on the number of colors being used. Heavier tinting is required for clear distinction where the number of colors is large.

3. To minimize wetting of the stock or yarn, use the most concentrated dispersions that can be satisfactorily handled.

4. Where powdered tints are used, be sure that they are completely dissolved before use. Undissolved dye particles can cause trouble, and they should be removed by filtering. Straining the solution through print cloth or a similar fabric is quite effective.

5. Use the lowest possible temperatures and humidities in steaming.

6. Scour the fabric in finishing at the lowest permissible temperatures. Tints can be set by too-high scouring temperatures.

Broken Picks

CONTINUED FROM PAGE 95

erratic movement of the shuttle. Anything that causes an uneven movement of the shuttle contributes to the cause of broken picks. The pick cams should be timed with a gauge especially made for the particular lot and model of looms. The lug, the power arm, and the stroke of the picker stick should be set to the manufacturer's specifications.

Other things that cause or contribute to broken picks are:

1. Rough places on the cover of binders and shuttle boxes
2. Reed or back box plates not squared or aligned
3. Lay-end plates and shuttle race not aligned
4. Harnesses not set or timed correctly
5. Protector rod sticking
6. Temple bar or temple thread cutter worn
7. Worn-out picker
8. Pickers not parallel
9. Warped or weak picker stick
10. Worn picker-stick bumpers.

The control of broken picks is dependent on close loomfixing. The best way to keep them under control is to keep all parts of the loom in the best possible condition. Then thoroughly inspect each loom making an excessive number of broken picks.

In cotton weaves such as type-four twills, four broken picks per 100 yds. will pass inspection without being classed as second quality if no two appear in any one yard and there are no

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other major defects. Cloth of this type woven with only one broken pick per 100 yds. is considered excellent. It is possible to improve this cloth quality by using combed yarns, slow-speed looms, and small filling-yarn packages.

Blending Cotton and Nylon

CONTINUED FROM PAGE 65

controlling factor in removing impurities without excessive loss of fibers.

Usually, the cylinder and doffer strips contain a greater percentage of nylon than the lickerin waste or the flat strips because nylon has a tendency to load on the card.

Cotton-nylon stock is carded on flat-top cards, and the use of the fancy roll is not necessary with the low-percentage nylon blends. However, when 1.5-den. nylon is used, carding rates are usually limited to approximately 12 lbs. per hr. With the exception of the carding rate, conventional card settings, stripping cycles, and grinding cycles may be used.

Drawing

Cotton-nylon stock generally performs satisfactorily on any of the standard types of drawing frames.

If 1½-in. nylon staple is used, the blended stock will, in many cases, process at conventional cotton roll settings without uneven drafting or cockling resulting from slippage of the nylon; but in many other cases, roll settings may need opening. The 1⅛-in. nylon staple will process without modificatioms of the roll settings.

Roving

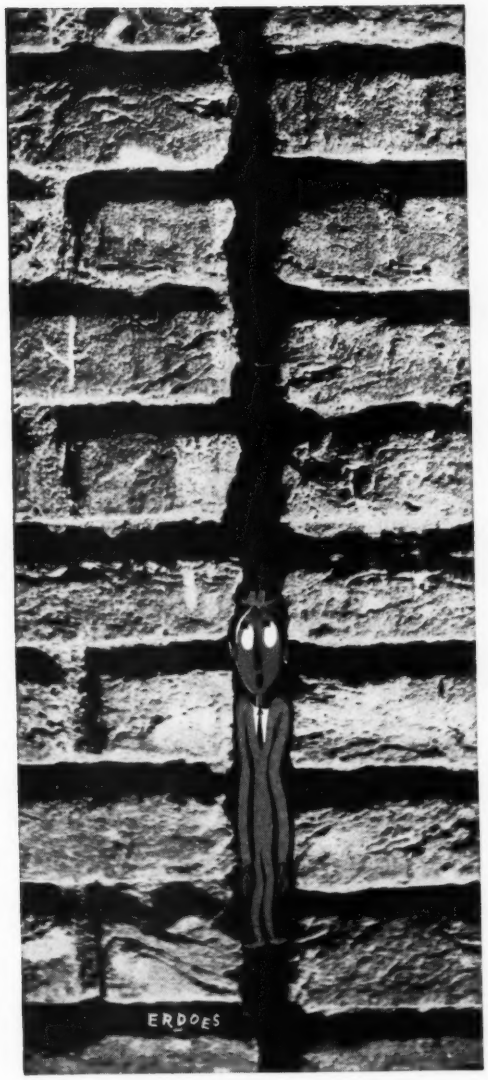
Cotton-nylon stock will usually process satisfactorily on most types of roving frames without modification of the conventional cotton settings. The same staple-length considerations apply here as in drawing.

Spinning

Spinning of cotton-nylon stock has been accomplished satisfactorily on all types of spinning frames. However, if fine yarn numbers are spun from 1½-in. nylon staple, roll settings must be sufficiently opened to prevent uneven drafting and cockling. The 1⅛-in. nylon staple can be processed without modification of the roll settings.

The strength of cotton-nylon yarn is less than 100%-cotton yarn. This reduced strength is believed to be attributable to the fact that nylon has greater elongation than cotton.

Spinning efficiency of cotton-nylon yarn is usually about comparable to that of 100%-cotton yarns.



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NO REPEATS . . . Listed here for September are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Ring twisters are described in a bulletin from Universal Winding Co. The machine twists single-end yarn or combines from 2 to 16 ends. The twist range is ⅛ to 55 tpi. Ring sizes are up to 4¾ ins. The take-up package may be up to 40 oz. **(F-1)**

A cheese creel is described in a brochure from Cocker Machine & Foundry Co. The creel has a fast-acting tension with a self-cleaning stop motion. All ends in reserve are threaded and ready to pull to the warper and lay into the comb when the reserve is rotated. **(F-2)**

An automatic slasher is described in a leaflet from Bachmann-Uxbridge Worsted Corp. Doffing and loading is hydraulically operated. The automatic self-aligning compressor roll can be regulated to any desired pressure. The loom beam is positioned automatically. **(F-3)**

Looms are described in leaflets from Hunt Loom & Machine Works, Inc. A high-speed rayon-filament loom weaves cloth up to 66 ins. wide. A cotton loom accommodates 12 harnesses and weaves cloth up to 60 ins. wide. **(F-4)**

Uptwisters capable of speeds up to 18,000 rpm. are described in a pamphlet from Crowther Ltd. The flexible spring mounting of the spindle allows the spindle to vibrate until it passes the critical starting speed, and then it returns to vertical at full speed. **(F-5)**

An interlock knitting machine built by G. Stibbe & Co. Ltd. is described in a brochure from Morris Speizman Co., Inc. The clearing cams in the dial and cylinder can be adjusted to the knit, tuck, or float position. The dial needles have two lengths of butt. A new dogless drive eliminates backlash. **(F-6)**

A top-dyeing machine is described in a leaflet from H. Krantz. The stainless-steel machine has 12 spindles. The pressure cover plates allow two balls to be dyed on each spindle instead of three. The machine is supplied with or without pots. **(F-7)**

A boil-off machine is described in a bulletin from H. W. Butterworth & Sons Co. The machine processes 50 yds. per min. and is built with 6, 8, or 10 beams. The roll widths vary from 44 to 72 ins. There is a two-ton squeeze after the second and sixth beams and a four-ton extraction after the tenth beam. **(F-8)**

A loop ager for printed fabrics is described in a leaflet from Proctor & Schwartz, Inc. Two men are required to run the machine, which replaces five roller agers. The output is 27,000 to 95,000 yds. per shift. Production charts are listed. **(F-9)**

A high-speed tenter is described in a bulletin from Winsor & Jerauld Mfg. Co., Inc. Width adjustment of the tenter may be made manually or by a motor drive. The entering end can be made so that conventional rail-guiding equipment can be mounted on the rails. **(F-10)**

AUXILIARY EQUIPMENT

Static eliminators are described in a bulletin from Simco Co. Application examples on cards, gill boxes, slashing and sizing machinery, warpers, and packaging machinery are illustrated. **(F-11)**

A filling-bobbin feeler is described in a brochure from E. H. Jacobs. The feeler is especially useful on fine yarns because contact with the yarn is reduced to a minimum. False feeling or prematurely throwing out of bobbins can be stopped. **(F-12)**

Reed-grinding and -brushing machine is described in a bulletin from Edda International Corp. The machine can be adjusted for reeds of any width and size up to 8 ft. The grinder gives a round finish to the reed-wire edges. **(F-13)**

Warp controls are described in a bulletin from Southern Loom Development Co. The controls include an electrical let-off, a mechanical let-off with weight control, a positive let-off with a variable-speed unit, and a crimp-control device for heavy fabrics. **(F-14)**

An individual card drive is described in a bulletin from Allis-Chalmers. The drive unit mounts on the card cylinder shaft. The unit fits into present aisles because it occupies little or no more space than an overhead drive. **(F-15)**

An adjustable-speed drive unit is described in a bulletin from Reliance Electric & Engineering Co. The unit consists of an operator's control station, a control unit, and an adjustable-speed drive motor. Textile applications are cited. **(F-16)**

A laboratory test blender is described in a leaflet from Fiber Controls Corp. The blender has a 1,500-gr. capacity and blends multiple percentages of cotton for fiber fineness, strength, maturity, and

in a bulletin from Westinghouse Elec-

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length tests so that only one set of tests is necessary to determine averages. **(F-17)**

Spinning-frame motors are described in a leaflet from Reliance Electric & Engineering Co. The totally enclosed construction eliminates fire hazards, the tripod mounting permits easy belt adjustment, and the mounting position under the frame saves space. **(F-18)**

Electrical controls for the textile industry are described in a bulletin from the Arrow-Hart & Hegeman Electric Co. Loom switches are lintproof and have push-button operation. The combination starters are also lintproof. **(F-19)**

Motor controls are described in a bulletin from Cutler-Hammer, Inc. Methods of protecting wye-delta systems, mixed phase loads, and mixed horsepower loads with three-coil overload protection are described. **(F-20)**

SUPPLIES AND CHEMICALS

Threaded fasteners for the textile industry are described in a bulletin from Standard Pressed Steel Co. Square-headed setscrews, self-locking socket setscrews, socket-head capscrews, button-head socket screws, and self-locking nuts that lock and stay put are described. **(F-21)**

Shuttles are described in a bulletin from Draper Corp. Special features in the shuttle for cottons are the recessed shuttle spur, spring assembly, and side-eye opening. The features in the shuttle for synthetic yarns are the No. 325-type eye, flange nut, reinforcing bolt, and the gray-fiber front wall and bottom. **(F-22)**

Tricot beams for nylon yarns are described in a leaflet from Briggs-Shaffner Co. The 21-in.-dia. beams are made from 356-T6 heat-treated aluminum. The barrel diameter is 7⅜ ins. The bore is suitable for a standard tricot 4½-in.-dia. arbor. **(F-23)**

Sequestering agents are the subject of a booklet from Refined Products Corp. The booklet contains technical information on the uses and applications of Perma-Kleers. **(F-24)**

Sodium sesquisilicate is used as a cleaner where vigorous alkaline action is needed, and is described in a booklet from Philadelphia Quartz Co. The basic detergent properties of wetting, emulsification, dirt suspension, and prevention of redeposition are evaluated. **(F-25)**

Direct dyes for resin aftertreatment are described in a bulletin from American Cyanamid Co. Dyeing and fastness properties of direct dyes are shown in graphs and tables. Fiber effects, dyeing rates, and temperatures of optimum exhaust are described. **(F-26)**

Glycerine as a product conditioner is the subject of a booklet from Glycerine Producers Assn. The major factors in choosing an agent that prevents products hardening are discussed with solubility, chemical stability, taste, and odor characteristics. **(F-27)**

Fungicides are discussed in a bulletin from Scientific Oil Compounding Co., Inc. Cunimene has an 8% copper content bound up in a complex metallo-organic compound to give a 2% tensile loss on duck weathered for six weeks and buried for three weeks. **(F-28)**

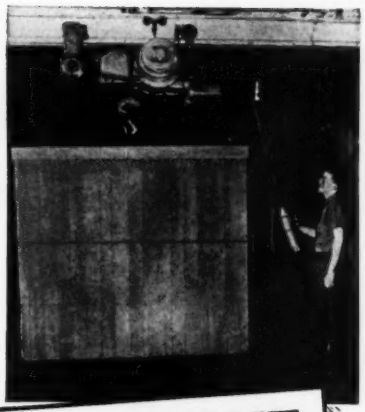
Fatty acids are described in a booklet from Emery Industries, Inc. Typical characteristics and possible applications are outlined. Two products find use as starting materials for textile softening agents. **(F-29)**

MAINTENANCE AND ENGINEERING

"Chemical Removal of Scale from Water Lines" is the title of a booklet from Dowell, Inc. Scale, sludge, clay, and other objectional materials coating the inside of water pipe can be easily, cheaply, and safely removed by using chemical cleaning methods. **(F-30)**

Wall maintenance and cleaning costs can be cut 75%, according to a bulletin from Quaker Maintenance Co., Inc. Time between paintings can be extended from five to seven years. One operator can clean between 3,000 and 5,000 sq. ft. daily at an average cost of 35¢. **(F-31)**

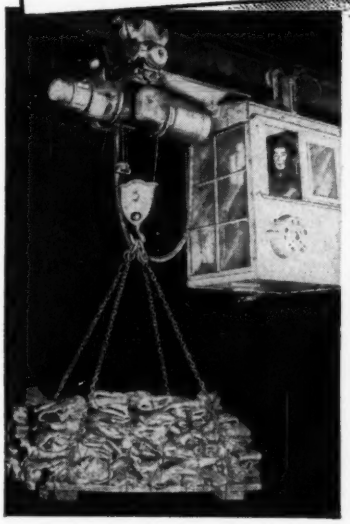
Dry-type transformers are described



SHEPARD NILES
Floor-Operated Hoist

Operator mainly occupied with other duties. Hoist used for fast, efficient handling of relatively short hauls.

WHICH HOIST is RIGHT FOR YOUR JOB?



SHEPARD NILES
Cab-Operated Hoist

Operator in cab moves loads along at high speeds—occupies best vantage point for spotting or stacking materials.

Choosing the hoist that's right for your job calls for expert advice.

Let the Shepard Niles representative in your area guide you in your choice. He specializes in through-the-air handling—knows which type of hoist will best fit your job.

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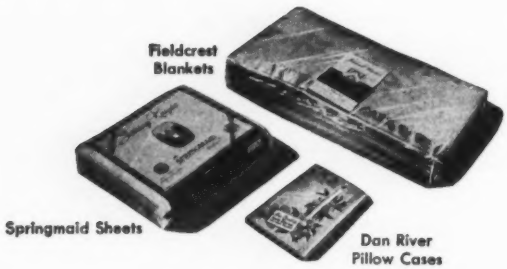


YOU CAN TELL
A HAYSSEN-WRAPPED PACKAGE
BY THE WRAPPING IT KEEPS!

easy, automatic operation

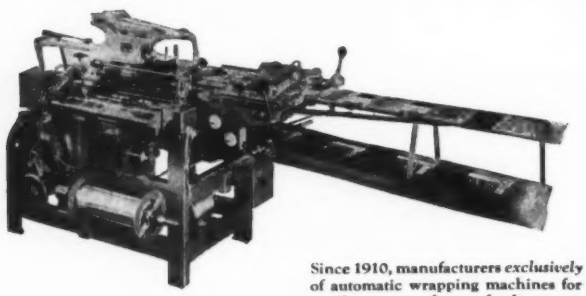
Regardless of size or shape, you get a neat, tight wrap on every package with a Hayssen automatic wrapping machine. *Wrapping's easier!* Also, production men report savings up to 80% over previous wrapping costs.

simple to adjust

No complicated adjustments from size-to-size on a Hayssen. No gears or sprockets to remove or change . . . no need for expensive mechanics to change size, either. So simple the operator does it on the job.

more sturdily built

Hayssen's simple, rugged design, using fewer moving parts, keeps these machines working and saving through years of dependable, trouble-free service. Every moving part is in the open and easily reached for maintenance and cleaning.



Since 1910, manufacturers *exclusively* of automatic wrapping machines for textiles, paper, frozen foods, meats, vegetables, and many other products. Whatever *your* product, Hayssen can solve your wrapping problem. WRITE today for more information.

Hayssen MFG. COMPANY
Dept. TW-9, SHEBOYGAN, WISCONSIN

in a bulletin from Westinghouse Electric Corp. Core, coils, and connections are kept clean and fully protected by a steel enclosure that gives a positive protection against lint, dirt, and dust. **(F-32)**

"Maintenance Management" is the title of a booklet from Remington Rand Inc. A schematic diagram shows how planning, performing, and controlling are done to provide maximum results from a minimum expenditure. **(F-33)**

Ceiling illuminations are described in a bulletin from Luminous Ceilings, Inc. Several before-and-after illustrations show results obtained by removing unsightly ducts, sprinkler systems, and other pipes. **(F-34)**

Automatic controls for heating systems are described in a bulletin from Minneapolis-Honeywell Regulator Co. Space-heater controls, automatic thermostats, low-voltage gas valves, and line-voltage equipment are described. **(F-35)**

Revolving joints are described in a brochure from Rotherm Engineering Co., Inc. The joints are used for steam, air, gas, and water at temperatures from −100° F. to +500° F.; and they are capable of handling 250 lbs. of steam pressure. **(F-36)**

Rotary joints are described in a bulletin from Key Co. The socket permits transfer of liquid or steam into or out of revolving drums and is available for drums having two outlets or for installations where an inlet and outlet are desired in the same unit. **(F-37)**

Steel-reinforced flooring is described in a bulletin from United Laboratories. Claimed to outlive the plant, this flooring is especially designed for trucking aisles, loading docks, and other areas subject to severe abuse. **(F-38)**

Nonshrink resurfacing of concrete floors, nonshrink concrete-floor patching, and nonshrink bonding of concrete surfaces are described in a booklet from A. C. Horn Co., Inc. Suggestions on the preparations of foundations for heavy equipment are given. **(F-39)**

Automatic industrial doors are described in a catalog from Clark Door Co. The doors are electrically operated, and no air is required. The automatic door unit opens or closes in about 3 secs. **(F-40)**

GENERAL

Washroom dryers are described in a bulletin from American Dryer Corp. A fan and heating element creates a stream of warm air that drys hands in 18 secs. The automatic timer shuts off both fan and element at the end of the 30-sec. cycle. **(F-41)**

Control centers are described in a booklet from Clark Controller Co. Instead of using a number of individual combination motor starters and mounting them at the motor sites, the starters are mounted in standard interchangeable compartments. **(F-42)**

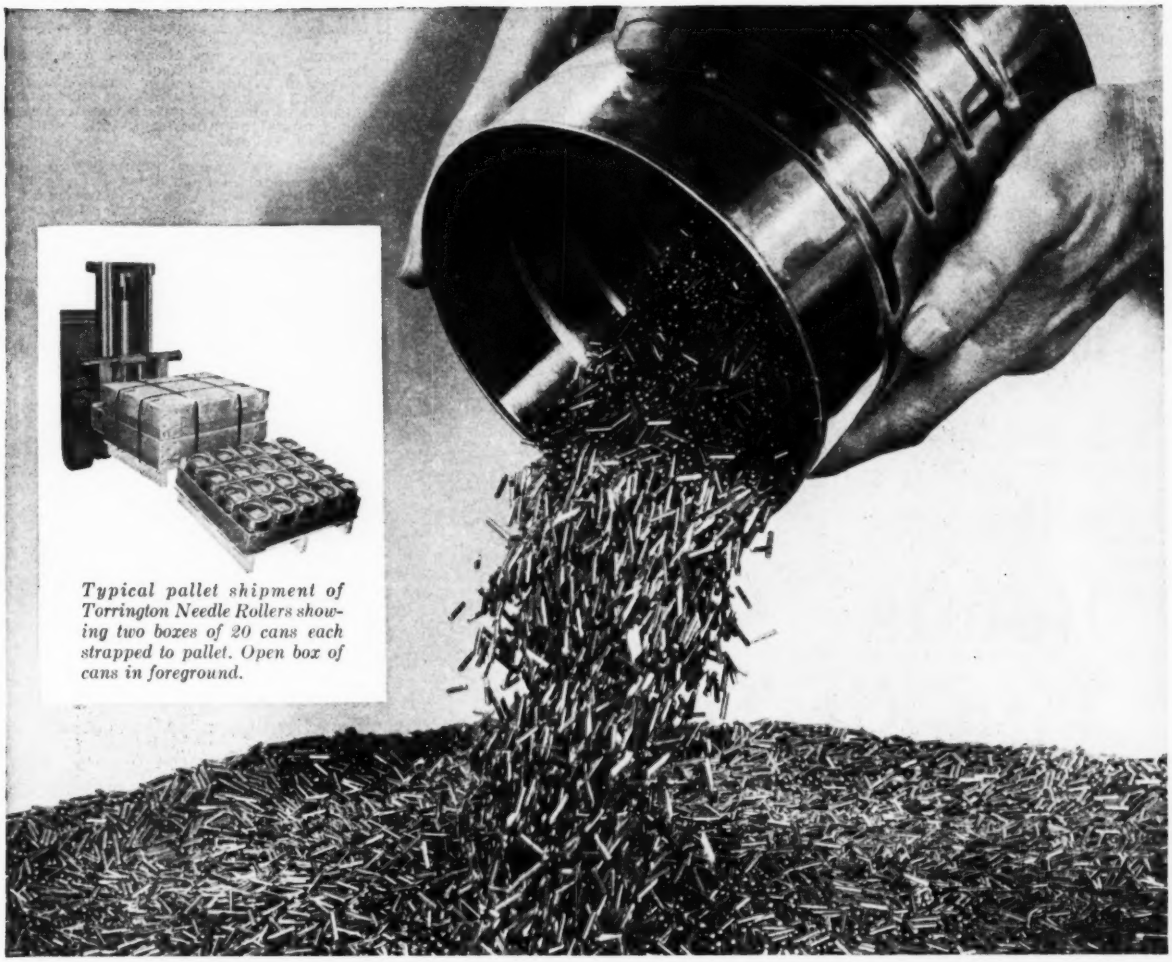
Custom-work platforms are described in a folder from Ballymore Co. Platforms for large-equipment repairs, production operations, maintenance, and other uses are described. Working at high levels is one of the prime considerations of the platforms. **(F-43)**

Group relamping is described in a bulletin from General Electric. An example shows how 60% of labor costs can be saved by group relamping. There is a 25% increase in lamp cost, but a textile mill received $31,000 worth of additional light. **(F-44)**

Conveyors for belt packaging are described in a bulletin from Pack Rite Machines. The conveyor moves filled bags from filling stations through the sealing machine to the packing tables. Four models range from 10 to 40 ft. **(F-45)**

Shipping methods are discussed in a folder from Railway Express Agency, Inc. Valuation coverage up to $50 on every shipment of 100 lbs. or less, and 50¢ per lb. on shipments over 100 lbs. without extra charge is provided. **(F-46)**

"Fire Can Destroy Your Business" is the title of a leaflet from Blaw-Knox Co. Various types of fire-protection systems



Typical pallet shipment of Torrington Needle Rollers showing two boxes of 20 cans each strapped to pallet. Open box of cans in foreground.

Torrington Needle Rollers—Vacuum-Packed for Cleanliness—Palletized for Easy Handling

Torrington Needle Rollers by the millions are now being vacuum-packed in tin cans to protect them from dirt, moisture and damage. The foods you eat are not packed with greater care.

This new vacuum pack permits us to send you rollers *dry*—free from oil or grease—so that they can go into your loading machines direct from the can, without time-consuming degreasing.

To make shipping and handling easier, we pack these cans 20 to a carton and strap two cartons to an expendable wooden pallet, for a total weight of about 1500 lbs. per pallet. This makes an easy load for your fork lift trucks to handle and store.

Torrington Needle Rollers deserve this special vacuum pack. They're precision rollers made under statistical quality controls of extraordinary rigor. Every step from alloy selection to polishing and packing is carefully checked to assure you that every can of rollers you receive meets your high standards. And to help you use these rollers to best advantage, Torrington's engineering staff is always available to assist in application design and testing.

Always specify Torrington for precision Needle Rollers in prime condition. In stock for immediate volume shipment.

THE TORRINGTON COMPANY

Torrington, Conn. South Bend 21, Ind.

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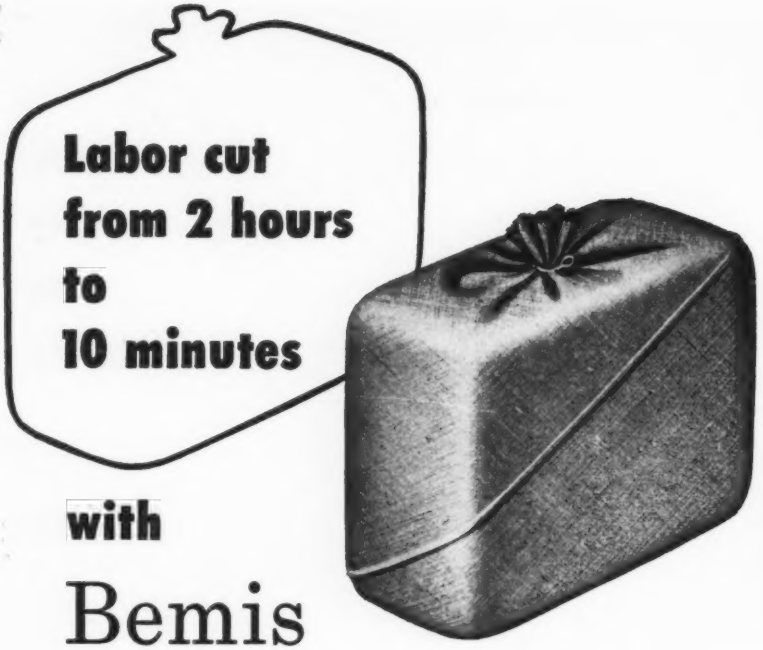
TORRINGTON NEEDLE BEARINGS

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers



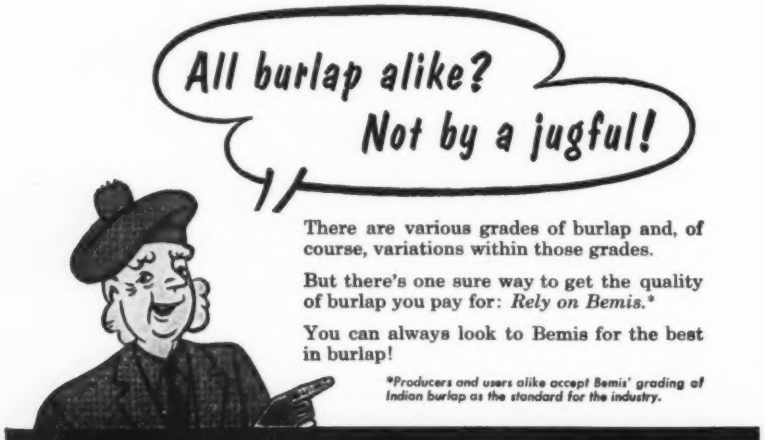
with

Bemis

Tite-Fit Tubing!

Maybe you can cut your wrapping labor costs the way this New York City textile company did. After a demonstration of Tite-Fit Tubing—the spiral-sewn burlap shipping tubing with 2-way stretch—the manager said, "Last evening it took two men over two hours, using flat yardage, to hand-sew and steel-strap two units that you have covered in ten minutes."

Now, of course, Tite-Fit Tubing has taken over the job in that plant . . . and labor costs have tumbled. Ask the Bemis Man to demonstrate to you.



There are various grades of burlap and, of course, variations within those grades.

But there's one sure way to get the quality of burlap you pay for: *Rely on Bemis.**

You can always look to Bemis for the best in burlap!

**Producers and users alike accept Bemis' grading of Indian burlap as the standard for the industry.*

Bemis BAG Company

General Offices
St. Louis 2, Mo.

available, such as water, fog, foam, and carbon dioxide, are discussed. **(F-47)**

Sound signals are discussed in a catalog from Benjamin Electric Mfg. Co. A simplified explanation of fundamentals of sound, a glossary of signal and sound terms, and nine suggested steps in choosing a signal installation are included in the book. **(F-48)**

"Better Laboratory Planning" is the title of a booklet from Scientific Apparatus Makers Assn. Certain basic conclusions relating to the planning of laboratories are examined. **(F-49)**

Recording systems are the subject of an article in "The Right Angle" from Sanborn Co. A new concept of amplifier interchangeability increases the versatility of oscillographic recording and widens its use. **(F-50)**

Mill Maintenance

Install Speed Reducers To Eliminate Extra Care

Speed-reducer units require little attention after they are properly installed and correctly aligned.

Foundations for speed-reducer installations should be rigid and substantial enough to prevent vibration and to maintain alignment. The most-satisfactory foundations are those of concrete, masonry, and structural steel.

Wood frameworks, however, may be used if they are rigidly designed and constructed.

In designing the foundation, consider the torque developed at the low-speed shaft in contrast with the motor horsepower. For example, a gear unit with a 100-to-1 ratio and a 1-hp. motor requires as rigid a foundation as a 10-hp. motor and a 10-to-1 ratio.

Align Units Correctly

Accurate alignment of gear drives is important. Since misalignment develops unusual stresses and overloads, a certain indication of misalignment is excessive wear on the coupling. A secure mounting on a rigid foundation is essential to proper alignment.

A bed or base plate for the support of both the motor and the reducer helps maintain alignment. These bases may be obtained from the gear manufacturer or built locally.

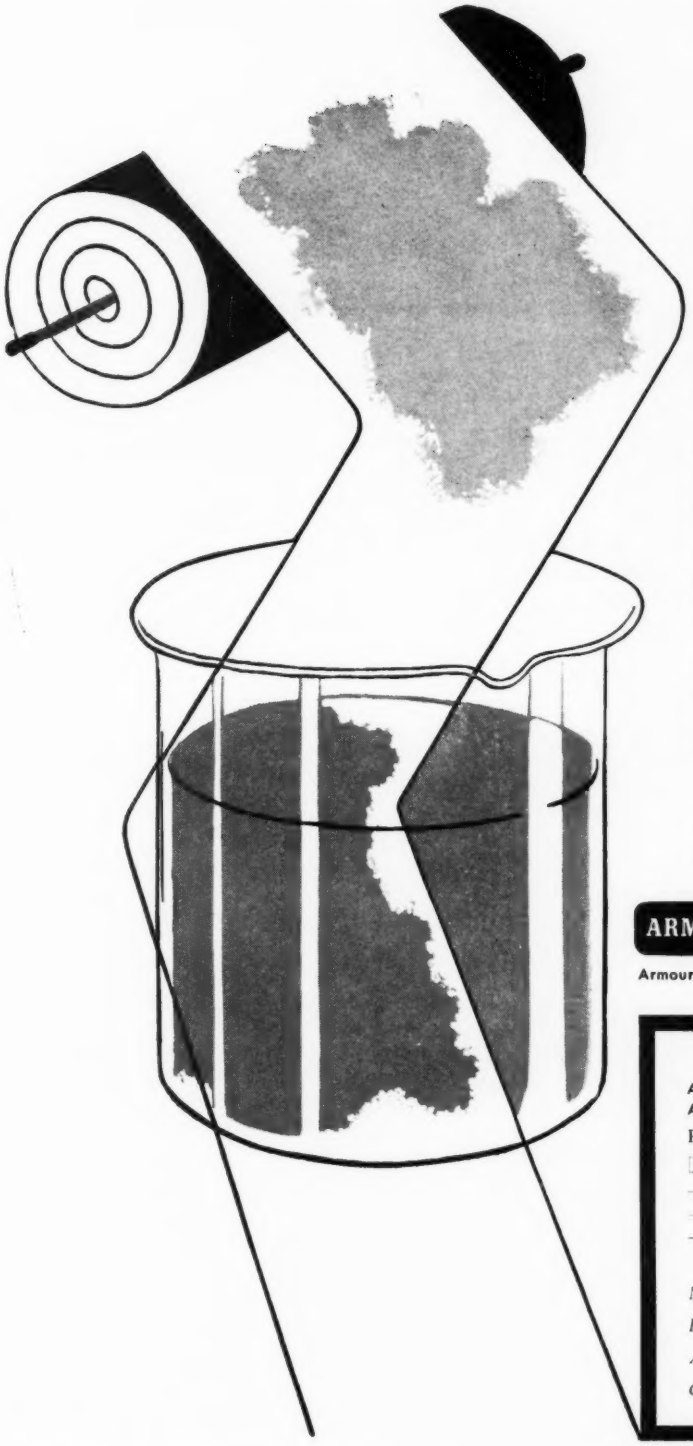
One way to level the bed plates is to use small steel plates shimmed up with thin pieces of metal.

Use Flexible Couplings

A flexible coupling rather than a

A new wetting agent in the ENERGETIC family

Energetic® W-100 wets out instantly as fabrics roll into the bath!



Use this new Armour discovery for rapid wetting all through your mill!

Test any wetting agent you're now using against Armour's new ENERGETIC W-100. You'll find that ENERGETIC W-100 wets much faster, much more thoroughly. It's your key to faster, better scouring, bleaching, dyeing and desizing!

This powerful new synthetic detergent is nonionic—works on *all* fabrics, is *not* affected by textile chemicals. And it's 100% active so you can use really *low* concentrations (only about ⅓ as much as conventional anionic materials). ENERGETIC W-100 is water-white, free-flowing and free-sudsing. And it's unbuilt so you can build it to meet your own mill specifications.

Just fill in the coupon below for a free sample. Or better yet, use this coupon to place your order now for a 5-gallon steel drum of ENERGETIC W-100! See what instant wetting can do for your operations—and your profits!

Specify these Armour nonionics, too!

ENERGETIC—for superior detergency

ENERGETIC S—superior detergency with solvents

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FREE SAMPLE AND ORDER BLANK

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Please send me:

☐ FREE! Sample of ENERGETIC W-100

____ 5-gallon drums of ENERGETIC W-100 @ $14.80 each

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☐ Bill me ☐ Check enclosed ☐ Money Order

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W9

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SPECIALLY DESIGNED
To Fit Your Specific Needs

(Left) Wooden Barrel Fibre Head Bobbin.
(Right) Aluminum Barrel Phenolite Head Bobbin.
Lestershire true running bobbins are long-lasting and efficient.

Lestershire bobbins by National are specifically tailored to give efficient, trouble-free service with both natural and synthetic yarns. Made for endurance, strength, and long life.

Close contact with mills—and knowledge of their ever changing needs for special-type bobbins—has made National's Lestershire Division a top source for bobbins.

Lestershire bobbins are made of hard, close-grained maple, vulcanized fibre, Phenolite (laminated plastic) and aluminum, in a wide variety of combinations, and for a wide range of uses. Included are twister bobbins, take-up bobbins, headless take-up packages, and many others.

For economy you can depend on Lestershire bobbins by National.

SEE LESTERSHIRE'S NEW BOBBIN VIBRATION TESTER AT THE GREENVILLE SHOW.

NATIONAL VULCANIZED FIBRE CO.
Lestershire Spool Division

140 Baldwin Street — Johnson City, N. Y.

BRANCH OFFICES AND TECHNICAL SERVICES:
National Vulcanized Fibre Co.

New Haven, Conn.
Chicago, Ill.
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Philadelphia, Pa.
Pittsburgh, Pa.
New York, N. Y.
Rochester, N. Y.
Cincinnati, Ohio
Cleveland, Ohio

Greenville Textile Supply Co.
Greenville, S. C.

Odell Mill Supply Co.
Greensboro, N. C.

National Fibre Co. of Canada, Ltd.
Toronto, Ontario

rigid one should be used between the motor and the reducer in direct drives. Transmission chains and belting are also used satisfactorily.

Coupling alignment can be checked with a thickness gauge and a straightedge.

After a unit has been in service several days, examine all bolts and nuts to see that they are tight. After the initial check, inspect the bolts and nuts periodically because vibration loosens them.

Oil Units Regularly

Inspect the oil level regularly and add oil when necessary.

In flush-feed installations, check the operation of the system regularly, and clean and flush the filters.

When high oil temperatures prevail, the trouble may be caused by a continuous overload because the unit is too small. An overload condition may also occur where a motor too large for the job is used.

Drain the oil when a unit has run two weeks and flush the case with a light flushing oil. Then add new oil. Change the oil every three to six months under normal operation. *Power Transmission Council, Inc.*

Minimum Filling Reserve

CONTINUED FROM PAGE 78

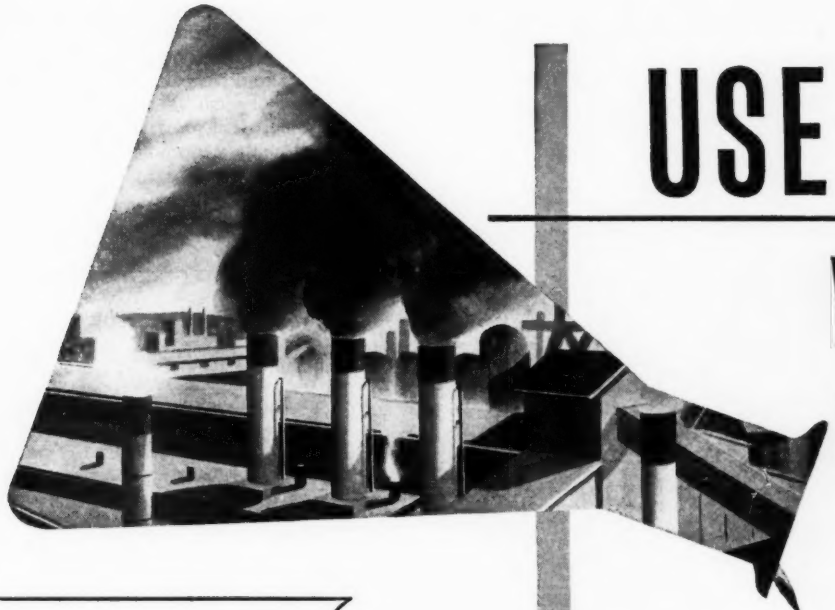
In 4x2 operation, the filling indicates on an empty bobbin when the shuttle is picked into the top box cell of the magazine-end shuttle box. The transfer is completed before the shuttle is picked again.

At the time of transfer, 4½ picks of filling are still left on the bobbin. This is two more picks of waste than is normally left on a routine transfer of a loom in 4x1 operation. But all bobbins will not be depleted just at the time the shuttle is picked into the top cell of the shuttle box.

When only a few rounds of yarn on the bobbin prevent a transfer at the usual 4½ picks, the shuttle has to be picked to the head end and back to the bottom cell of the magazine-end shuttle box. A feeler indication at this position is impossible, and the shuttle has to be picked back to the head end and returned to the top cell of the magazine-end shuttle box. This action uses a total of four picks of filling and uses all but one-half pick of the filling reserve.

Filling bobbins with less than 4½ picks will certainly cause broken picks, run-outs, and drag-ins.

The filling-reserve building mechanisms on winders should be adjusted to

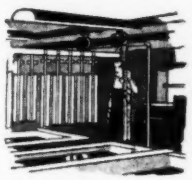


USE WASTE HEAT!

AIR CONDITIONING

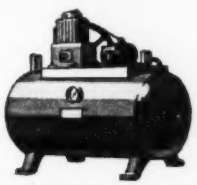
Let the adaptable Servel 25-ton Water Chiller convert waste heat, or steam from any source, into lowest cost air conditioning for your plant and offices!

PROCESS COOLING

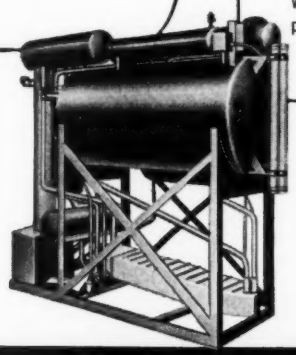


Use the cheapest energy source —even waste heat—to achieve high-efficiency cooling for manufacturing processes! Servel Water Chiller operates on dependable absorption principle.

INDUSTRIAL PRECOOLING



Increase capacity and improve performance of air compressors and internal combustion machines! The Water Chiller is compact, light; can be safely installed on almost any floor.



The Servel Water Chiller cooling system has no moving parts to wear. It is quiet and vibration-free. Light floor loading and freedom from vibration mean that no special foundations or braces are needed. Zone control is unusually easy. And operation (using waste heat, or steam from the cheapest source) is low in cost. Backed by a 5-year warranty. See your dealer or mail coupon for information and engineering co-operation.

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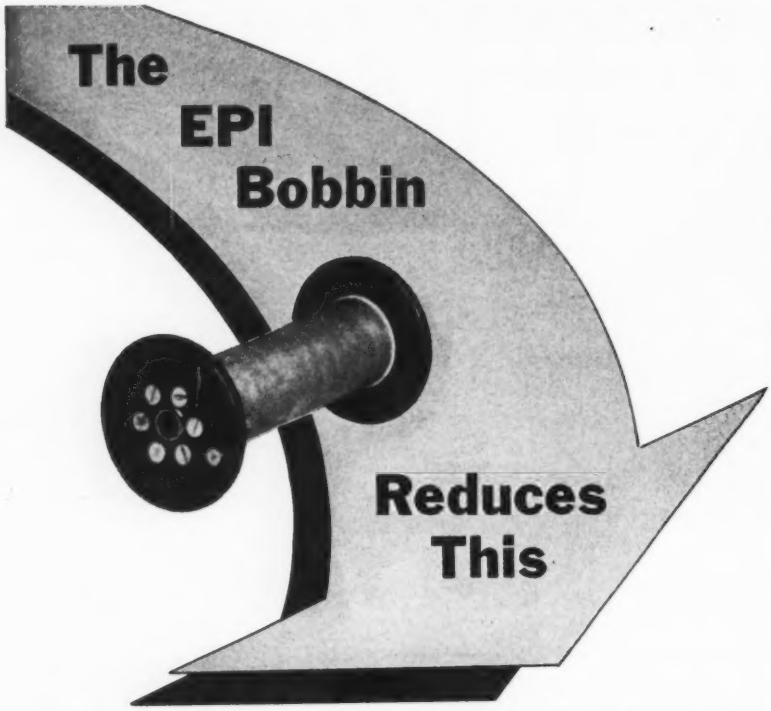

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keep the filling reserve on bobbins constant.

Operators on stationary-type winders should check each spindle at the start of each shift to be certain the proper reserve is being wound. On automatic traveling-spindle winders, bobbins should be checked frequently to be sure the necessary reserve yardage is being wound.

Hosiery Inspection

CONTINUED FROM PAGE 101

an imperfect stocking. The stockings are not counted and put in the bag; but they are placed, by the operator, in the compartments on the machine top.

Prevalent faults are placed in the compartments on the left. Pull threads are placed in the first compartment, reseams in the second compartment, machine mends in the third compartment, and so on.

When large lots of one style are handled by one operator, she can inspect 220 doz. pairs of stockings daily. Stockings of heavy denier tend to slow production because they are more difficult to pull on the form than 10- or 15-den. stockings.

High Production Soon Reached

The third day after the operator was introduced to the machine, she inspected 180 doz. Her production reached 200 doz. daily in 10 days.

There has been little maintenance on the inspecting machines since they were installed more than six months ago. All moving parts are electrically operated.

When the operator changes to a different style or size, the faulty stockings in the compartments are transferred to the pin racks. These racks have three tiers made from 2-in.-square wood with wooden dowel pins at 4-in. intervals on the upper edges.

The racks are covered with soft cloth, and the pins are painted gray. The pins are divided into groups. Each group is used for one style, and there are four pins in each group. A card pinned to the rack below each group identifies the style. Sizes are painted on the pins.

When 3 doz. mends have accumulated, they are returned to the seamer or sent to the pull-thread mender.

Pull Threads Ironed in Gray

All pull threads mended in the gray are heat set during mending. A test to determine first-quality hosiery resulting from ironing in the gray showed an increase of 20% in perfect

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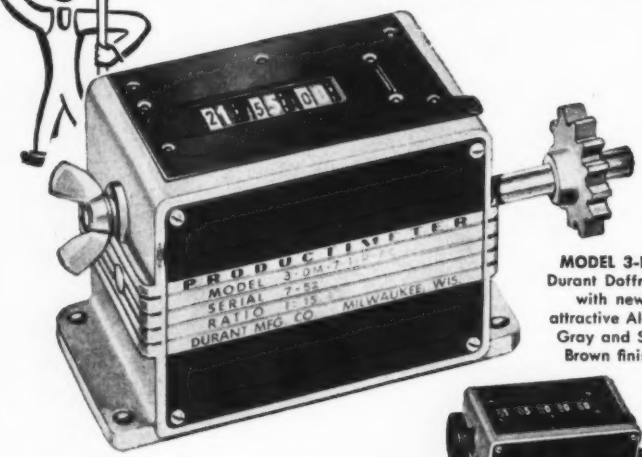
It's unusual to talk about a television program in this magazine, but we wanted you, our customers and friends, to hear about MEDIC first . . . we honestly believe it to be the most exciting new dramatic production in years . . .

Startling in its realism and honesty, MEDIC is based on case histories and carries the official endorsement of the Los Angeles Medical Association; produced under their technical supervision by Worthington Miner, originator of *Studio One;* created and written by *Dragnet* writer, James Moser. Don't miss the first performance September 13! The Dow Chemical Company, Midland, Michigan.

See MEDIC Monday Nights 9 to 9:30 EST, NBC-TV DOW

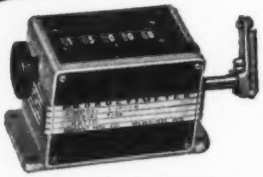
with DURANT DOFFMETER



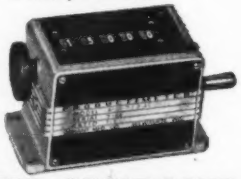
MODEL 3-DM
Durant Doffmeter with new, attractive Alaska Gray and Seal Brown finish.

This is the newest addition to the Productimeter line of textile counting machines. The Durant Doffmeter is a compact, predetermined counter designed to cut off the loom or signal when the preset number of yards is reached. Eliminates cut marks and waste ends by assuring uniform yardage . . . simplifies inventory control.

Present day high costs make the installation of Durant Doffmeters on every loom a practical money saving investment. Plan now . . . write or contact us for detailed information.



High speed, small, compact SP Predetermined Counters adaptable to many Textile applications. Available in Stroke and Rotary. Counts up to 2000 per minute.



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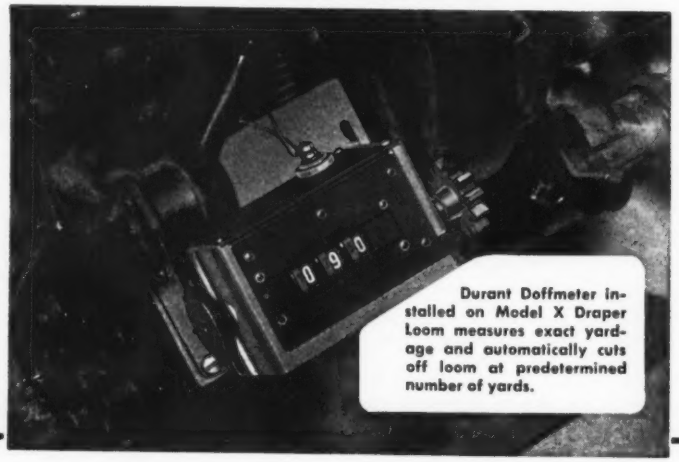

Durant Doffmeter installed on Model X Draper Loom measures exact yardage and automatically cuts off loom at predetermined number of yards.

hosiery. The stockings' appearance is improved because the stitches around the mend don't pucker during final boarding.

The ironing is done with an attachment patented by Marvel Specialty Co. that is fixed to the pull-thread machine. This attachment has increased mending production by 20% because the operators do not have to put the mending machine down to pick up the iron.

Gray-mending production is about 53 doz. per day, while finish-mending production is about 50 doz. per day.

A rheostat provides for fluctuations in power and keeps the ironing temperature set to give the best results for gray and finished hosiery.

When the pull thread has been removed, and while the mend is stretched over the cup, the iron attachment sets the stitch with one light stroke. Practically all pull threads repaired this way make perfect hosiery.

Training Supervisors

CONTINUED FROM PAGE 54

only act out a role. The effectiveness of such a performance will be short-lived because workers are often more impressed by general attitudes than specific acts.

Another supervisory technique is to always answer questions asked by workers. A supervisor who has been sold on this technique but who hasn't changed his way of thinking about people might eagerly answer questions when he is not busy and not worried about anything; but in times of stress, he will usually revert to his old habits. When he gets control again, he might eagerly answer questions again; but to workers, his attitude and performance are unpredictable.

A supervisor's attitudes are important because they determine how he appraises the work situation. Two supervisors will look differently on an idle worker; one will see him as loafing, and the other will see him as resting. So one supervisor will think in terms of discipline; the other will not. Whenever the problem of discipline comes up, the action must depend on a correct understanding of the problem; the attitude must fit the technique.

The supervisor's critical need is understanding human behavior. Technique training without attitude training encourages manipulating human behavior more than understanding it. A supervisor who has developed an attitude of sympathy for people will

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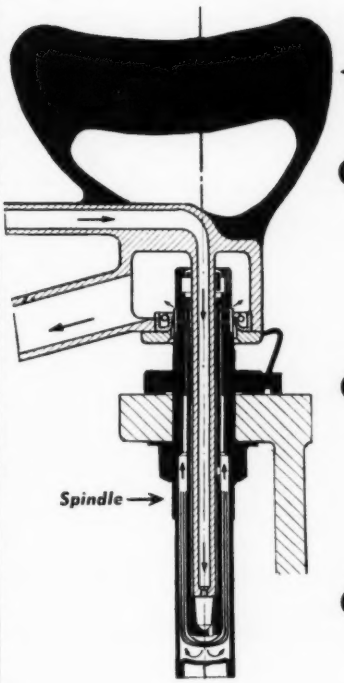

- **Change of oil and simultaneous cleaning done within fraction of a minute.**
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- **No edge pressure on the rollers, roller-bearing and footstep being always perfectly aligned.**
- **Smooth running quality reduces ends-down to a minimum.**
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generally find ways to help people with their problems, and a supervisor who respects workers will make a greater attempt to settle disputes at the work level.

If a supervisor has positive attitudes, the attitudes provide a built-in incentive for him to develop techniques that agree with his attitudes. When proper attitudes are combined with desirable techniques, improved performance on the job is a natural result, for, in the end, the object of training is self-development.

Flash Ageing

CONTINUED FROM PAGE 83

properties by a reputable chemical manufacturer results in thickeners to meet specific needs. Thickener selection must be in balance with the other mechanical and chemical factors.

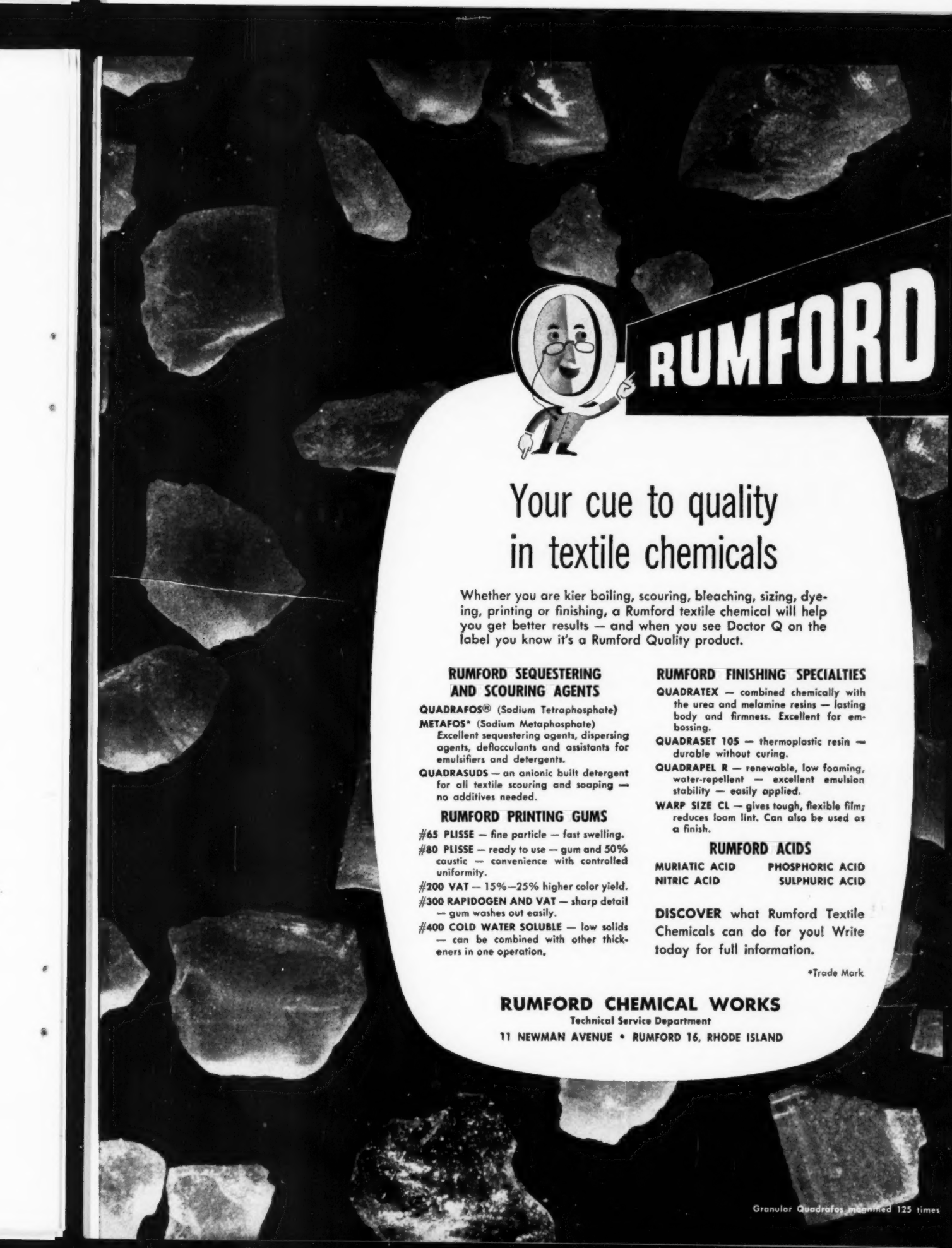
The Vat Dyestuff

No matter how carefully all mechanical factors are balanced or how well selected the print thickener, all can fail if the proper care is not taken in selecting a full color range of vat dyes that favor the flash-ageing process. This process opens up a much broader selection of vat dyes than are presently usable for conventional printing. Many of the dyeing colors are satisfactory. Vat-dye producers are screening their lines to pick the most appropriate colors, and much screening work has already been done by a number of the pioneer flash-ageing printers.

Your dyestuff suppliers will be pleased to give you a selected list of possible colors, although the colors will have to be put to further screening tests to meet the mechanical and chemical balance in an individual plant. Just as the dyestuff producers have developed special printing colors to meet the requirements of conventional vat printing, they will also meet any special requirements of the flash-ageing process as it develops.

These properties are important to consider in selecting the dye: (1) solubility characteristics (ease of reduction, ability to respond quickly to the reducing chemicals); (2) oxidation (ease of oxidation, ability to respond quickly to the oxidizing chemical); (3) dispersing characteristics (freedom from speckiness); (4) tinctorial powers (color concentration); (5) fastness characteristics (to washing, crocking, dry cleaning, sunlight); (6) cost; (7) uniformity.

The solubility characteristics are of



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#300 RAPIDOGEN AND VAT — sharp detail — gum washes out easily.

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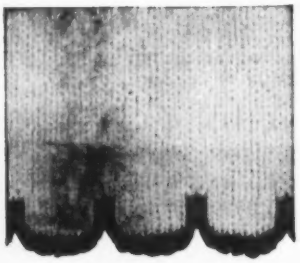

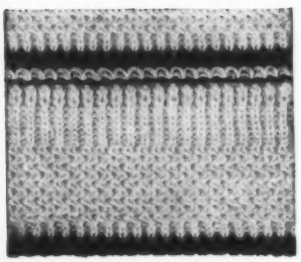

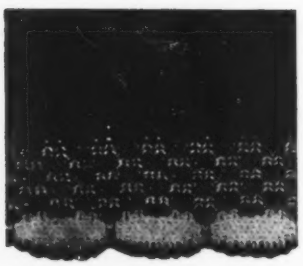

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prime importance; and as a general class, the anthraquinone types seem well suited. Most of them produce good color value, good brightness, good affinity for the cellulose, and excellent fastness properties. With proper selection and screening, however, there are large reservoirs of thioindigoids and indigoids to choose from.

By flash ageing, the same vat dyes produce a substantial increase in color value and brightness over conventional ageing. This increase is because flash ageing is a wet dyeing process in contrast to conventional ageing, which operates in limited or starved moisture conditions. This increased color yield is a direct saving.

After you achieve success with one dye, do not interchange prototypes without checking. While the chemical complex and the tinctorial power may be standardized, the methods of dyestuff precipitation, washing, the dispersing agents and dispersing techniques, the standardizing additives, the amount and type of humectants, etc. may have to be varied. Some of these factors may contribute to flushing or bleeding difficulties even though the printing thickener and other conditions remain the same.

Printing of light and medium shades does not usually present any great problems in dyestuff selection. The problem of selecting dark shades that do not flush concerns itself with high color concentration in ratio to the available surface per unit area for dyeing. The problem is thus magnified when dark colors are printed on very light fabrics. As in dyeing of a given fabric, the surface will accept only so much color. Attempts to add more color are futile and wasteful.

Therefore, color concentrations have to be regulated to meet the fabric requirement. To produce the desired shade or intensity, it is often necessary to use a lower concentration of total dye solids by shading (mixing complementary colors) rather than to use a single color.

To produce sharp black objects and lines, some plants prefer to use aniline black and give the goods a short steaming to develop the black before flash ageing.

The Reduction Solution

The necessary effective chemicals are caustic soda and sodium hydrosulfite. Other additives are often made to correct flushing difficulties and to establish a balance of conditions between the dye, fabric weight, etc.

Usually the hydro content will be 4 to 7.5% and the caustic 1.5 to 5%. High caustic content gives quick solubility, but flushing may be ex-

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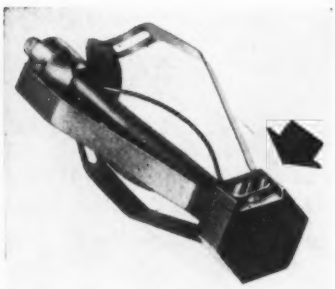

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perienced if too much is used. Low caustic ratios are not always practical, because certain dyes require relatively high caustic content to reach full solubility. A buffered alkali balance is sometimes reached with caustic and soda ash or potash.

Sodium chloride or large quantities (up to 15%) of Glauber's salt is used in some reduction formulas when the conventional pad setup is used. A high salt concentration keeps the print thickener and excess dyestuff precipated or confined to the printed object and eliminates flushing to a degree. High salt contents, however, have a tendency to dull or cloud the colors and in some cases prevent full color strength from developing. Here again, with selected thickeners in the formula in place of salts, flushing can be controlled and colors can reach their full strength and brightness.

The thickener aids pickup and location of the chemicals and acts as a sizing on the unprinted portion of the fabric to protect the ground areas against staining.

It is necessary to thicken the reduction solution when using the blotch pad or smooth-roll applicator. Several thickeners are available for this purpose, and choice is determined by the type of pad applicator and the formula of the reduction solution.

Remember that flushing caused by poor dyestuff selection, excessive deposit on the fabric, and too much penetration in the case of machine prints cannot always be corrected by simply adjusting the reduction formulation. This is a spot, however, where reasonable adjustments can be made to lend flexibility to the system.

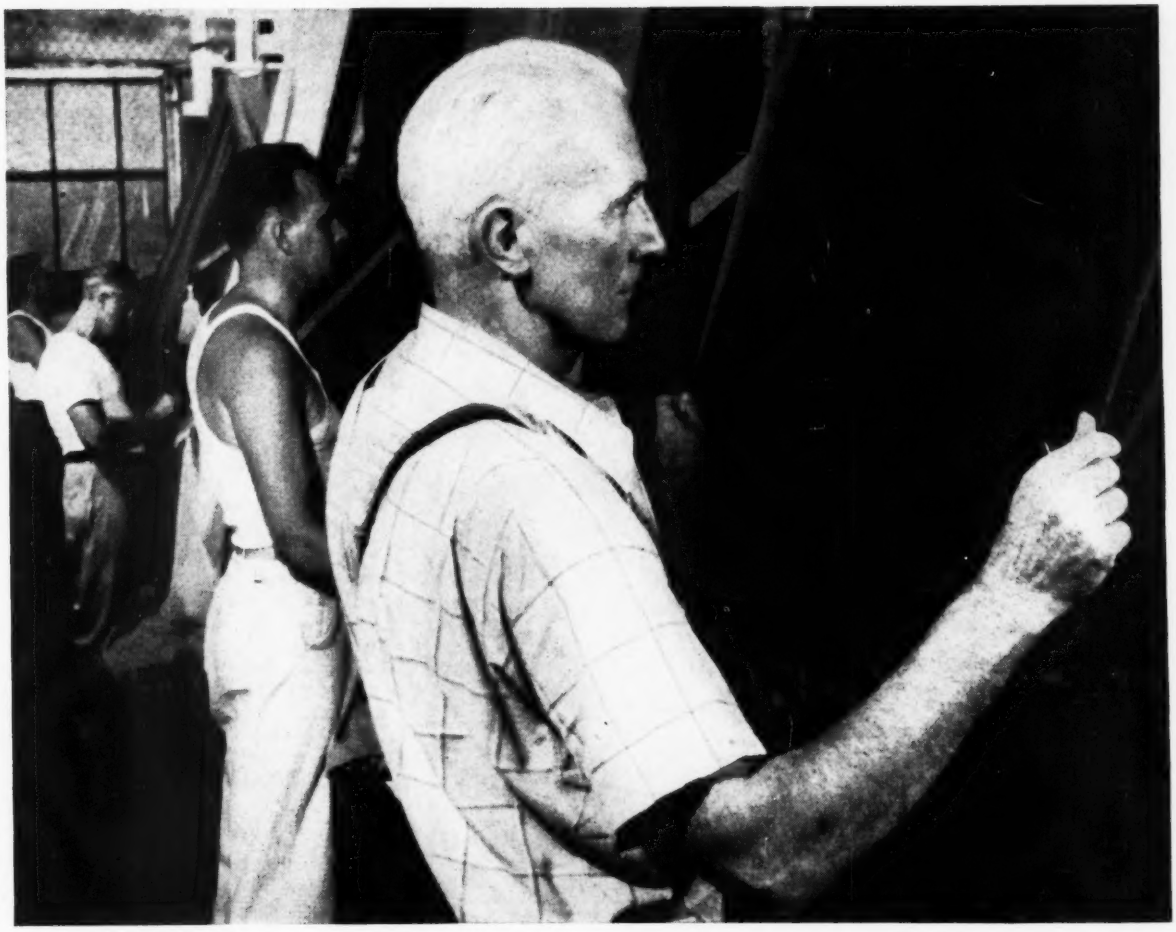
A typical reduction formula for the conventional padder setup is:

3.0 to 5.0% caustic soda
4.0 to 5.0% soda ash or potash
6.0 to 7.0% sodium hydrosulfite
1.5 to 2.5% thickener (dry solids)
85.5 to 80.5% water

Adjustments are made to meet the required conditions. It is important that the pad solution be run cold. Elevated temperatures tend to dull the colors.

Oxidizing

The effective chemicals commonly used in this process are sodium dichromate and acetic acid or hydrogen peroxide and acetic acid. In using these chemicals, keep the bath at 130 to 140° F. to speed the action. Other oxygen-producing chemicals can be used, and the problem here is effectiveness vs. cost. The chemical concentration or requirements need not be great if enough cold-water capacity is available to follow the partially oxidized prints. If feasible, as the



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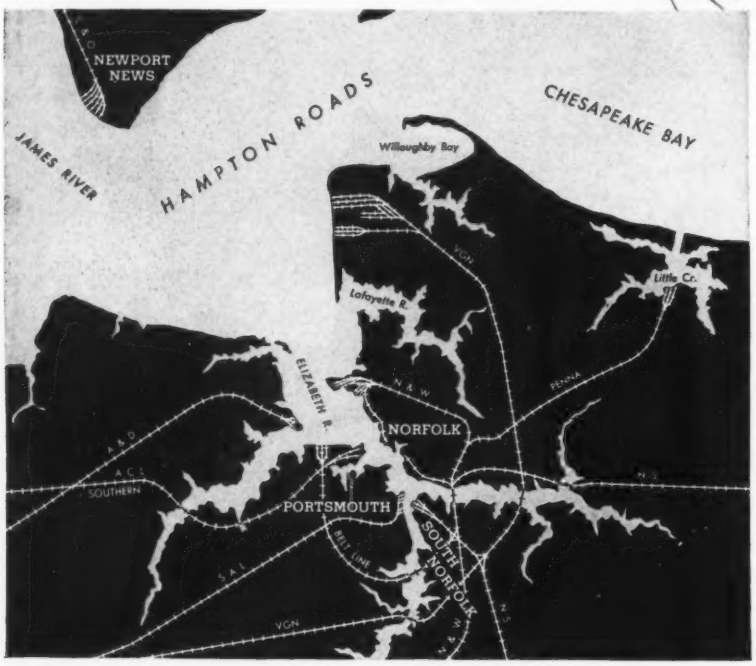

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Functioning as *one* port unit, the Ports of Hampton Roads —Newport News, Norfolk, Portsmouth and South Norfolk —provide direct rail-to-ship service and many modern facilities which make for speed and economy in the assembly of raw materials . . . and fast and more profitable distribution of finished products to principal markets.

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For a complete answer to: "What's So Attractive About a Plant Site in the Hampton Roads Port Area?"—communicate with us for full, accurate and confidential information.

AREA DEVELOPMENT DEPARTMENT

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fabric emerges from the ager, neutralize the caustic with acetic acid in the first compartment to save on the oxidizing chemicals in the second compartment. Experimentation will soon lead to the best practical running conditions.

Washing and Soaping

This operation follows oxidation in subsequent compartments of an open-width soaper, or the fabrics can be soaped and rinsed in rope form. The success of rope washing depends on the ease of removal of the print thickener and how well the oxidation step has been carried out. Soaping is followed by thorough rinsing and drying on dry cans.

This process, like any high-speed process, must be tackled with knowledge and appreciation of the contributing factors; but once the factors are balanced properly, the process becomes merely routine.

With the many advantages possible, we believe that flash ageing is destined to make rapid strides.

Overwaxing Warps

CONTINUED FROM PAGE 63

Little training of slasher employees was necessary when the applicator was installed because the operation is almost automatic. The thermostat in the steam line to control the temperature of the melted wax in the melting-pot reservoir is set at 155° F. Wax, in 2½-lb. 8-in.-square by 2-in.-thick blocks, is dropped into the melting-pot reservoir.

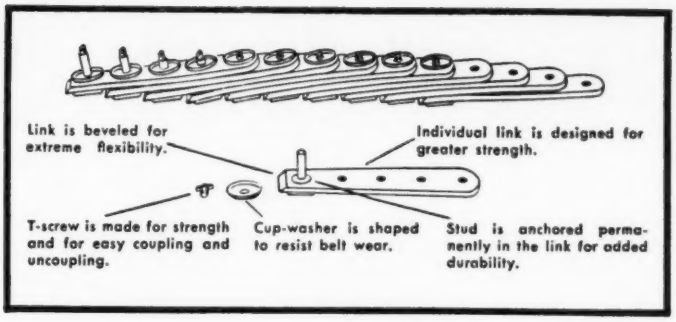
Cold wax at a Monday-morning start-up requires 30 mins. to melt. Added wax, when the reservoir is already hot, requires only 15 mins. to melt. The reservoir is 12 ins. square and 7½ ins. deep. Steam is supplied to the reservoir from a 3-in. main-supply line through a ½-in. line where the thermostat is mounted.

Melted wax is fed from the reservoir to the trough through a ½-in. line. The trough is 6 ins. wide and 5 ins. deep. The stainless-steel roller is mounted in antifriction bearings and extends 1¼ ins. over the top of the vat. The melted wax is fed manually into the trough with a valve.

Wax left in the reservoir over week ends is kept hot with the thermostat control. It has also been left cold and reheated with good results.

The roller is raised in its bearing stands to give ¼-in. ride to the slashed warp yarn. About 1% wax by weight is added to both nylon and Dacron

This detailed line drawing of the new Veelos TD and TE v-belt makes it easy to see how this new v-belt is designed to do a better job... easier!


Link is beveled for extreme flexibility.
Individual link is designed for greater strength.
T-screw is made for strength and for easy coupling and uncoupling.
Cup-washer is shaped to resist belt wear.
Stud is anchored permanently in the link for added durability.

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TD and TE Adjustable V-Belt for D and E drives

▶ *easy* to couple and install

▶ does a *better* job for a *longer* time

THE NEW VEELOS TD AND TE adjustable v-belt was developed *specifically* for D and E drives. It's not just an adaptation, it's an entirely new patented v-belt design!

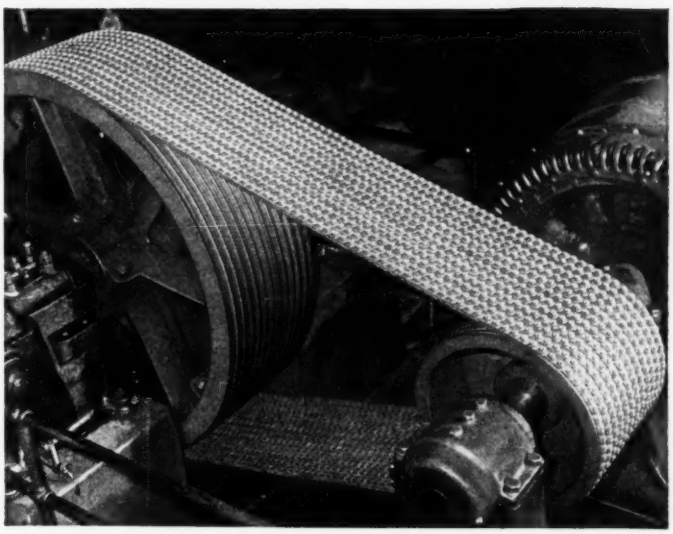
New Veelos TD and TE v-belt is faster and *easier* to install. Cup-washers and T-screws join links together to make up individual belts—and you don't need to remove outboard bearings.

New Veelos TD and TE v-belt lasts longer. Advanced construction of stud, cup-washer and T-screw provides added strength and durability—protects the new high-tensile strength link.

New Veelos TD and TE v-belt is perfectly balanced. Machine-cut sides and uniform links provide smooth, vibrationless, full-power delivery.

Put the new Veelos TD and TE v-belt on your D and E drives . . . prove to yourself that this v-belt does a better job for a longer time!

Get the complete story of this great, new v-belt. Send coupon for new 8-page illustrated bulletin.



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yarns. At this rate of application, a 3,000-yd. Dacron warp is overwaxed for a cost of $1.66. (Wax costs 60¢ per lb.)

The amount of wax added to the warp is adjusted by varying the speed of the roller.

An Experiment: All Wax, No Size

Experiments are being made on overwaxing high-twist (30 tpi.) nylon warps without slashing them at all. Several warps have been prepared this way, and results in the finished cloth are being checked. The first reports from the finished cloth have shown that the cloth is okay.

Weave-room production on these warps is at the same high figure of the warps both slashed and overwaxed.

Warps overwaxed, but not slashed, are threaded around the slasher cylinders. On warps run over the tops of all cylinders, the high-twisted ends snarled. Better control of individual ends is possible with routine threading of the warp.

So far, overwaxing warps without slashing them is purely experimental, but the experiments will continue for further data.

New Opening Equipment

CONTINUED FROM PAGE 115

top, it hits a larger adjustable deflection plate and passes across the suction area of the delivery duct, where light, clean fibers are removed. Heavier, dirty tufts travel on to the left-hand agitator, which takes them around the other set of grid bars. Then the stock joins the incoming stock for another trip around.

The blunt pins on the agitators are widely spaced to provide a buffeting action. Through the inspection window (a fluorescent fixture is mounted inside), the opening action looks like a whirling snow storm. Underneath, the waste box is a dead-air space.

A 3-hp. motor drives the Axi-Flo, and low-horsepower requirements for the opening line is a feature of the equipment. The four ball-bearing mounts have external fittings that require oiling once every six months. Two other features are the small space requirements and the low cost of the opening line.

Processing dividends are returned throughout the mill. Mill trials indicate low nep counts and a long effective staple length of cotton opened and cleaned through the Axi-Feed and Axi-Flo. Little good fiber is left in the waste.

Circle T-1 on Reader-Service Card

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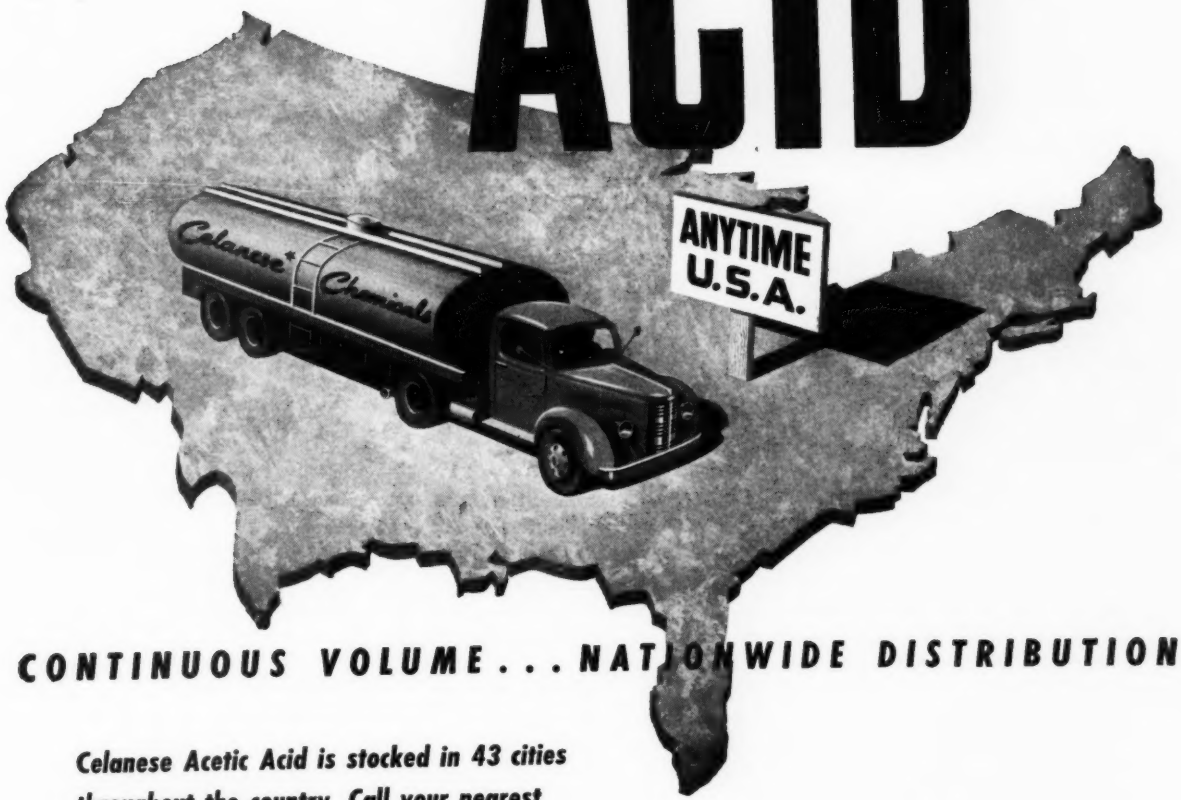

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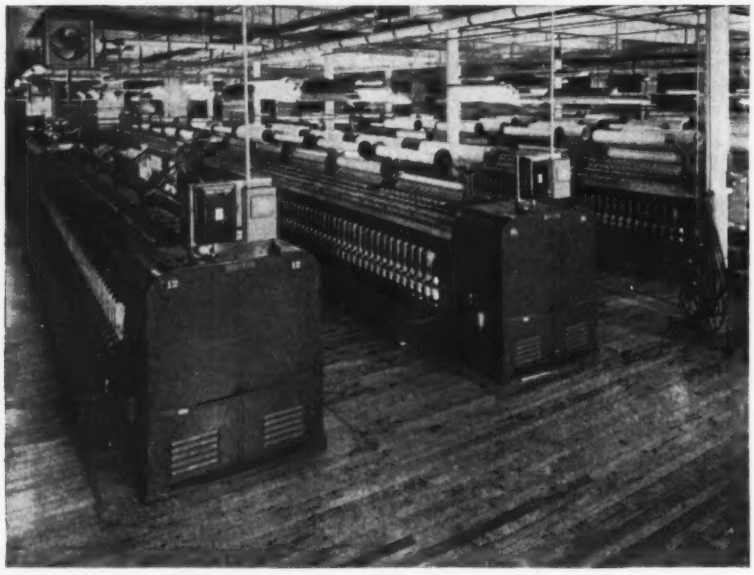
Modern spinning room of S. Stroock & Co., Inc., Newburgh, N.Y., with 40-year-old floor of Northern Hard Maple.



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Books of Interest

Survey of Rayon Processing

THE BRITISH RAYON AND SYNTHETIC FIBERS MANUAL, 2nd Edition; Harlequin Press Co. Ltd., South King St., Manchester 2, England; cloth, 364 pages, 30 shillings ($4.20).

The first edition of this manual was published as *The British Rayon Manual.* Other synthetics are now included, but the emphasis on rayon remains. The manual has 16 chapters written by a total of nine contributors. Rather than giving detailed processing information to the specialist, the manual is more of a reference work on the basic facts of processing.

Chapters cover every mill operation from tow conversion to dyeing and finishing of rayon and blends.

Sixth Edition of Design Book

TEXTILE DESIGN AND COLOR, by William Watson; Longmans, Green & Co., Inc., 55 Fifth Ave., New York 3, N. Y.; cloth, 484 pages, $8.

This sixth edition of Watson's book was revised by two of his associates at The Royal Technical College, Glasgow, Scotland. The principal change from the fifth edition is an appendix on the man-made fibers and what the designer should know about them.

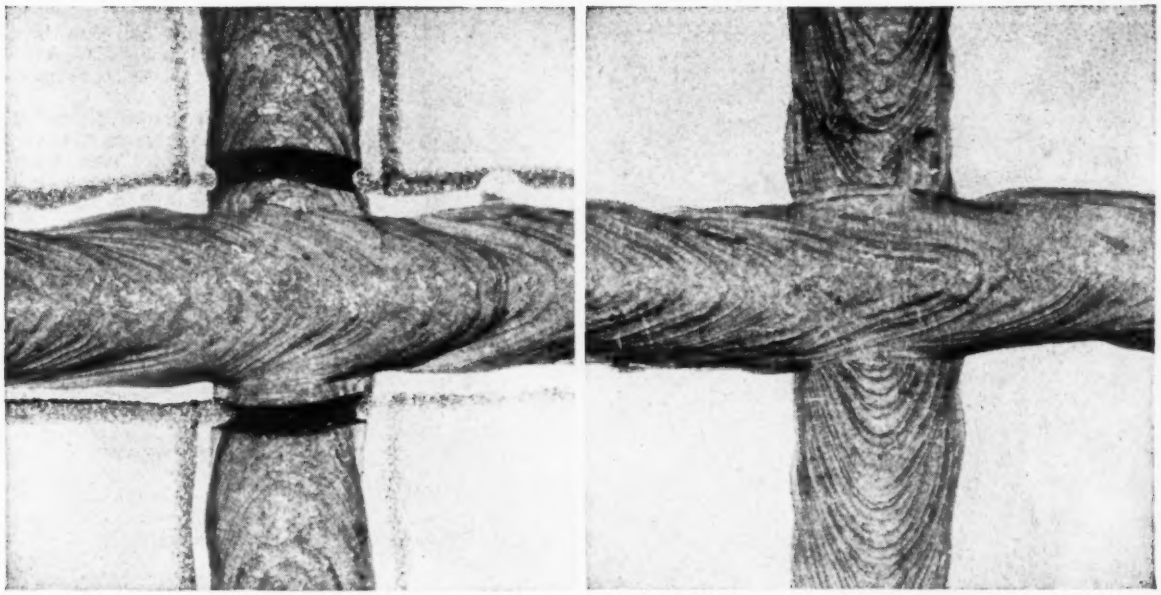
The book has many illustrations and explanations of designs from the elementary plain weaves to simple designs to jacquard work. An appendix gives descriptions of standard yarns, weaves, and fabrics.

Human Behavior From Three Viewpoints

HUMAN BEHAVIOR IN INDUSTRY, by W. W. Finlay, A. Q. Sartain, W. M. Tate; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; cloth, 247 pages, $4.50.

This book is the result of a one-week course, "Human Relations for Foremen and Supervisors," taught by the three authors at the Institute of Management at Southern Methodist University. The authors are, respectively, an engineer, a psychologist, and a sociologist. The book starts and ends with chapters on an imaginary plant manager who is faced with just about all of the problems a plant manager can have.

In between, each chapter presents a readable discussion of the various aspects of the plant manager's problems; but, unfortunately, the chapters do not progress in building an understanding of human be-



Two welded samples were tested for three 4-hour periods in a solution of 10% nitric and 3% hydrofluoric acid at 176 F. Specimen at left showing acid attack alongside welds is regular Type 304; specimen at right, free from acid attack, is Armco 18-8 ELC (Type 304L).

PROTECT WELDED STAINLESS EQUIPMENT AT LESS COST WITH ARMCO ELC

You needn't take chances on carbide precipitation adjacent to welds in textile equipment. Armco offers two extra-low carbon (ELC) stainless steel grades that are completely satisfactory for service in welded equipment up to 800 F. They are:

ARMCO 18-8 ELC (TYPE 304L)
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THEY SAVE YOU MONEY

Armco 18-8 ELC costs less than the columbium- or titanium-stabilized Types 347 and 321, yet insures the same freedom from intergranular corrosion in the recommended temperature range as the more expensive types. The Armco ELC types are produced in sheets, strip, plates, bars and wire.

"EXTRA-LOW-CARBON" DOES IT

Armco ELC grades contain a *maximum of only 0.03% carbon.* This small amount of carbon is not enough to cause harmful carbide precipitation adjacent to welds during welding. Therefore, stabilizing elements are not needed, for either shop- or field-welding.

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Let us send you a copy of the article, "How to Control Carbide Precipitation in Welding Stainless Steels." This is the latest and one of the most concise articles ever written on the subject. For more information on the ELC grades, get the booklet, "Armco's ELC Stainless Steels." Just check what you want on the coupon and mail it to us.

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havior in industry. The book does cover valuable topics that are not usually covered in books of this type: the basic sociological facts of life in America.

The book is recommended as a reading book for supervisors who want to increase their awareness of the human factor in industry rather than as a textbook for a human-relations training program.

History of Wool

A SHORT HISTORY OF WOOL AND ITS MANUFACTURE, by E. Lipson; Harvard University Press, Cambridge, Mass.; 193 pages.

This book traces the evolution of the various phases of textiles (the raising of the wool and the machines that process it) from its inception down through the years.

It traces the growth of the yarn, weaving, and finishing operations from their first crude hand efforts through to their mechanization; and it is liberally sprinkled with quotations from poets of the day to realistically picture some of the early hand operations.

The book makes interesting and profitable reading for anyone interested in the history of wool and its manufacture.

Equipment Tested For Fire Protection

APPROVED EQUIPMENT FOR INDUSTRIAL FIRE PROTECTION, 1954; Associated Factory Mutual Fire Insurance Companies, Publications Dept., 184 High St., Boston 10, Mass.; paper, 176 pages, $2.

Before a piece of equipment gets the approval of the Factory Mutual laboratory, sample units are subjected to laboratory tests. Two classes of devices are tested: (1) devices used for the control and extinguishing of fires and prevention of explosions and (2) devices that would prevent serious hazards if not properly safeguarded. The listing of equipment is intended to be an aid in specifying and purchasing fire protective equipment and devices. Listings are paid for by the manufacturer of the particular device. Separate indexes of manufacturers and devices are provided.

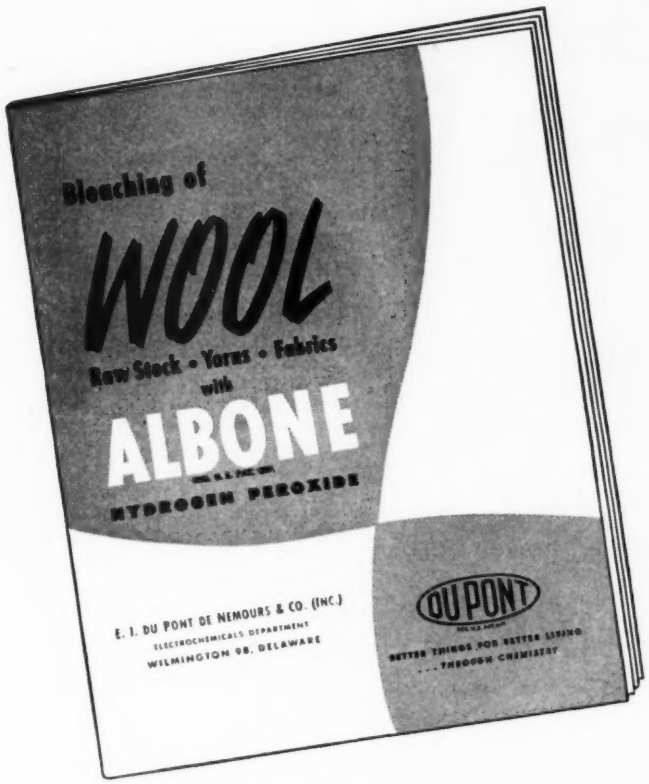
What Industry Is Doing To Educate Employees

THE EDUCATION OF EMPLOYEES: A STATUS REPORT, by Douglas Williams and Stanley Peterfreund; American Management Association, 330 W. 42nd St., New York 36, N. Y.; paper, 64 pages, $1.25.

The authors find that seldom does a company have a specific philosophy or policy concerning employee education.

The major current interest is economic education. Most such programs result from the interest of a top executive, and there is seldom much preplanning of the program or long-range plans. The authors conclude that there is "more attention being

Here's an up-to-date review of modern wool bleaching methods



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This authoritative summary of the many advancements made in the bleaching of wool reflects the depth of practical experience that only a pioneer in the field can offer you.

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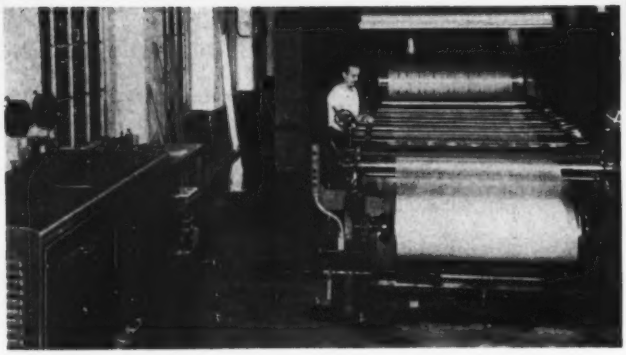

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paid to the question of how to reach the employee rather than to the question of what to reach him with—or why."

Two cautions recommended by the authors are:

1. Top executives think in terms of economic concepts that are usually new ideas to employee audiences.
2. Economics is an emotionally charged subject.

What is needed, say the authors, is "a wide-open exploration into employee thinking and viewpoints."

Very little is also being done about evaluating programs. Evaluation depends on the selection of criteria; and to properly evaluate a program, management has to decide whether the purpose of the program is to increase production, increase morale, transmit information, transmit ideas, or change behavior.

Executive Development In 10 Selected Companies

CASE STUDIES IN MANAGEMENT DEVELOPMENT, by Robert G. Simpson; American Management Assn.; 330 W. 42nd St., New York 36, N. Y.; paper, 140 pages, $2.50.

This is an exhaustive study of the actual methods used by 10 representative companies in the development of their executive personnel. The study is based on visits to the companies and consultations with their top managements. The factual report on each company covers its history, organization, policy, and practice with regard to executive personnel (including compensation, retirement, and promotion programs), plus a full description of the executive-development plan and an evaluation. Many charts and sample forms are included.

Pointers for Supervisors

CONTINUED FROM PAGE 113

It's pretty easy at that point to assume the employees have a lot of the background you have and to communicate the change in procedure by a brief announcement that hereafter a new method of recording production will be used. This action may lead to considerable resentment against the change simply because employees were not given the full story. It may delay full acceptance and cooperation in making the new procedure work when a more-favorable result could have been gained with better communications.

I believe it was Rudyard Kipling who said he had six honest serving men— Who, What, When, Where, Why, and How—to help him tell a story. Those same words can provide a valuable assist in a supervisor's job of communications on any subject—

a new rule, an impending reduction of the work force, a change in production schedules, an alteration in job assignments, or whatever. The supervisor should take the time to work out the answers to these word questions:

Who? (The individual affected.)
What? (What, exactly, the new procedure, the changed method, or the new job assignment is.)
When? (The time when the change is scheduled to go into effect.)
Where? (The machines or sections or departments or other areas affected.)
Why? (The reasons behind the move.)
How? (The procedure to be followed in carrying out the change.)

If, in addition, he plans his communications with employees' interests in mind, he has moved a big step forward in the vital day-to-day job of improved communications.

Card-Clothing Care

CONTINUED FROM PAGE 77

near the end while you make the setting. All rounded nuts and damaged screws and washers should be replaced before setting. After adjustments are made, tighten the jam or clamp screws. Always leave the adjusting nuts in the backing-off position. Recheck the settings.

To set lickerin, mote knives, screens, and feed plate, remove the feed plate. In setting the lickerin to the cylinder, loosen the nuts holding the lickerin bearings. Make the proper adjustments on the adjusting rods, and leave the nuts in the backing-off position. Tighten the nuts on the lickerin bearing. Recheck the setting with the lickerin belt on.

To set the screens, remove the caps from the lickerin bearings, and take the lickerin from the card. Remove the mote knives. Clean the lickerin basket screen thoroughly. Make the proper settings to gauge on the screens to cylinder at back, middle, and front, right and left sides. Set the lickerin basket to the lickerin with the lickerin templates or a special gauge. Clean the lickerin shrouds and ends of the lickerin. Replace the lickerin. Secure the caps. (Before replacing the lickerin, inspect the mote knives for burrs and other damage. Replace the mote knives and set the brackets to give the correct angle on cards where the angle is adjustable. Make the adjustment on the knives.)

Clean the feed plate. Place in position. Set to gauge. Leave the adjusting nuts in the backing-off position. Tighten the capscrews to secure

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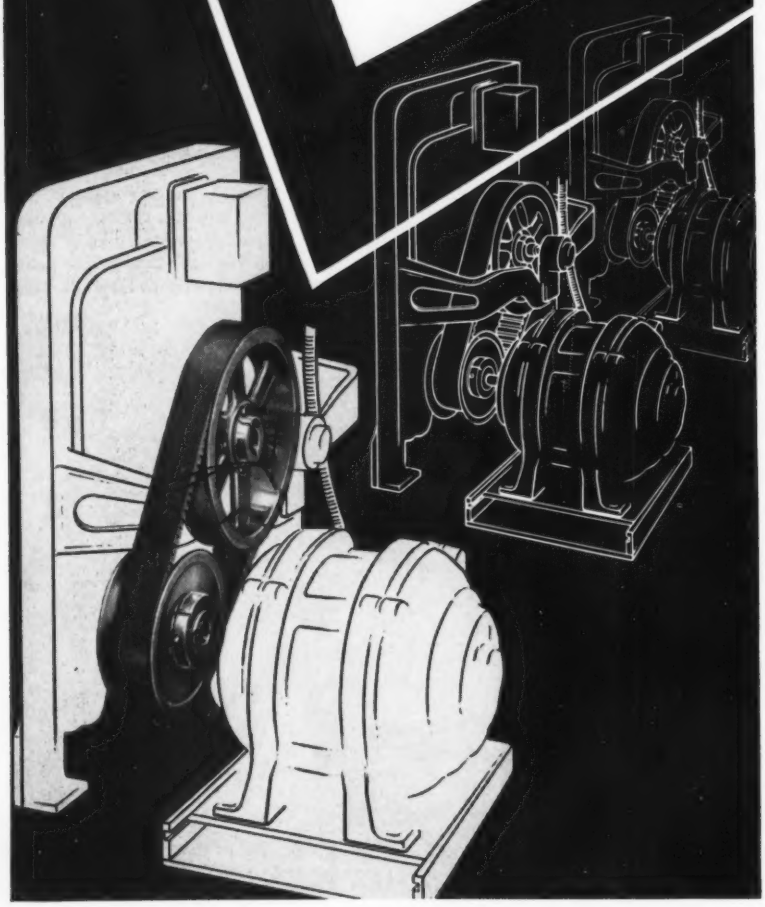
Yes, now you can obtain low cost variable speed whenever and wherever it's needed. The Wood's variable speed drive is the simplest drive on the market today!

Here's all you do to change speeds: Loosen both split collars and turn adjusting screw from either end. Adjustment of Wood's Variable Pitch Sheave is made by moving both flanges simultaneously with simple adjusting screw, accessible from either end of the sheave. Notice that this drive uses a single wide range belt for maximum HP capacity, thus eliminating the problem of maintaining matched belts and notched grooves.

For the complete story on this new drive, stop in at section 228, Southern Textile Exposition. We'll be delighted to see you. If you can't make the show, write T. B. Wood's Sons Co., Chambersburg, Pa., and ask for Bulletin 497.



the plate to the card frame. Recheck the setting.

Set the flat-stripping comb to the flat when the comb-blade sweep is nearest to the flat. Leave the adjusting nuts in the backing-off position. Recheck the setting.

Card Grinding

1. Cut out the feed. Run the card until thoroughly free of stock.

2. Stop the card. Strip with the stripping roll.

3. Clean the card all over. Remove all waste from under the card, front to back. Clean out between the frame sides at the cylinder and doffer. Check the alignment and level of the card and make necessary corrections.

4. Clean the flats thoroughly with a roll covered with special flat-cleaning fillet. Straighten up bruised or damaged wire.

5. Inspect cylinder fillet and doffer fillet for bruises or other visible damage. Scrape up all bruised or jammed wire. If fillets are loose or blistered (raided, wire shot back, backed), call the overseer.

6. Back off the doffer, flats, and lickerin to insure against damage while the cylinder, doffer, and flats are being ground. Since the cylinder runs in the opposite direction in grinding, worn bearings can cause the doffer to get into the cylinder and the cylinder into the lickerin.

7. Remove the doffer gear and clean it thoroughly. Inspect teeth, bore in gear, setscrews, and key. Make any necessary repairs or replacements.

8. Check the grinding stands. Adjust for proper grinding. Be sure that all stands are tightly bolted to the card frame.

9. Place the traverse grinders in the stands and set to the cylinder and doffer. Let them grind about 30 mins. Reset to get about six sparks for a 3-in. wheel; and let them grind out, usually about 7 hrs. Oil the grinder screw and bushings. Check during the grinding period.

The cylinder speed is usually 165 rpm. for both production and grinding. Doffer grinding speed is 275 rpm. Traverse-grinder speed on both cylinders and doffers is 700 rpm. All grinders must be in good condition to prevent damage to card clothing. Emery fillet on the traverse grinder should be changed after six cards have been ground.

The drum grinder should be set to 0.005 in. on the first contact, drum to flats. Speed is 750 rpm. Let grind 30 mins., and make the necessary adjustments. It should spark very little, if any. Grinding time is 7 hrs. Oil the bushings and check during grinding. Emery fillet on the flat drum

Officina Meccanica

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NOVARA, ITALY

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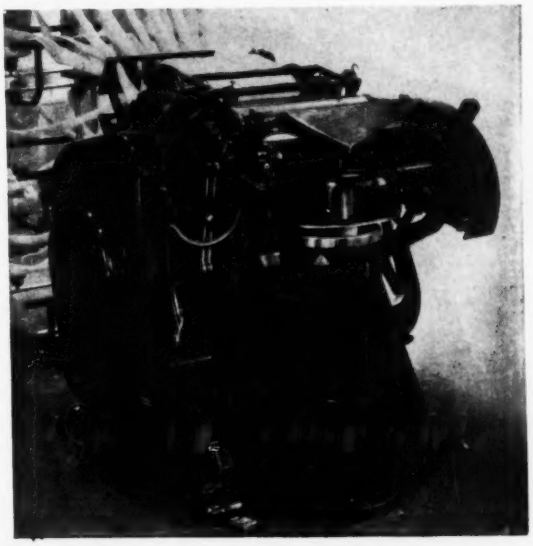
The entirely new SANT' ANDREA Rectilinear Comb pictured here is generally recognized as the most advanced machine of its type available today. Its patented new nipper motion assures 30% higher production with less waste and no sacrifice in quality. Ease of operation and adjustment combines with automatic controls and functional design to achieve highest efficiency.

We can furnish a complete line of up to date worsted machinery! Prompt service and parts available in the United States.

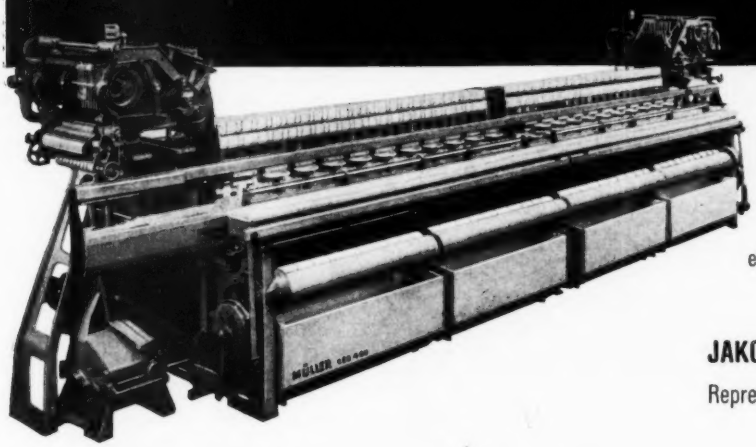


HIGH PRODUCTION

FLEXIBILITY

ECONOMY

Latest type narrow fabric looms



High-capacity ribbon looms for all rayon, silk, and cotton ribbons, elastic tapes and webbings.

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Representation: Ernest L. Frankl Associates
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Slim-fast-versatile

Snap-on* Ferret Wrenches

—for top speed in tight spots

Here is one of the most adaptable, time-saving wrench kits you can put in the hands of maintenance or production workers—a complete set of Snap-on's famed Ferret wrenches. The set includes all handles (⅜″ square drive), adaptors, extensions and sockets (¼″ to ¾″), to speed a wide range of jobs. Handles are long, slim, strong, with patented "Palm-Grip" for real working comfort. 4-way socket grip for quickest handle hook-up. Available through your nearby Snap-on factory branch. Write for Snap-on Industrial catalog and general catalog of 4000 hand and bench tools.

SNAP-ON TOOLS CORPORATION

8100-I 28th Avenue, Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation.

grinder should be changed after 20 cards have been ground.

Much damage can be done to flat wire by a poor setting of the drum to the flats and by oily or worn emery fillet, grinding stands out of line, a worn shoe on the grinder cradle, or the cradle not locked in position.

One of the many duties of a card grinder is to constantly check cards being ground. Ropes and belts break occasionally and will shorten grinding time and damage fillets unless promptly repaired or replaced.

The head grinder or overseer should check the card after the settings are made and before the card is put into production. A second check should be made after the card is put into production for evidence of facing and for quality of work produced.

Tests run in mills have definitely proved the advantages of grinding the cylinder, doffer, and flats each grinding cycle. It follows that cards should be reset all over after grinding. The tips offered are in line with this procedure.

Supplement Vacuum Stripping

The advent of vacuum-stripping equipment has interfered with proper maintenance of card cylinder fillets in particular. Brush stripping not only kept the wire clean but permitted visual inspection of cylinder fillets several times daily. It was an easy matter to notice cylinders too far over to one side and to have this condition corrected before a raised or blistered fillet resulted. Immediate corrective attention was given to jams, which might otherwise result in premature replacement of fillets. Fillets that had already started to raise were noted, the card was stopped, and the fillet was redrawn. Opportunity was given to check on excess oil, condition of tacks, probable trouble with plugs, and many other things that might occur to harm the cylinder clothing.

Some of these last advantages can be regained by stripping cylinders and doffers with a stripping roll, (equipped with proper size of wire for your clothing), once a week or every 40 hrs.

Textile Equipment News

CONTINUED FROM PAGE 122

Thickness Tester

The C & R tester is in production at Custom Scientific Instruments, Inc., Box 170, Arlington, N. J. The instrument combines a number of ASTM specifications for thickness measurements into one instrument. It can be used to test the thickness for knit goods, woven glass fibers, pile floor covering, backing, etc.

After the thickness measurement, the tester allows dead-weight loads to be transferred from a ball-bearing support to the plunger by a screw and handwheel without impact. In this manner, the compression is measured by reading the dial indicator. Removal of the dead weight allows the dial indicator to show the recovery. The instrument has a ¼-oz. preload and a 5-lb. maximum dead-weight load.

Circle T-21 on Reader-Service Card

Sheaves for Cam Looms

Ball-bearing sheaves for cam looms with spring tops are available from B&B Industries, Inc., 733 Wade Hampton Blvd., Greenville, S. C. Single- and double-flange harness sheaves and compensating sheaves are available. Ball-bearing sheaves reduce harness-cam wear, improve the shedding motion by reducing harness stickiness, eliminate strap wear, and reduce the load on springs. No lubrication is required, and the sealed bearings will not drip. The bearings are interchangeable.

Circle T-22 on Reader-Service Card

Fast Lift Unit

For electric-fork-truck operations where a fast lift speed is desired, an electrohydraulic lift unit has been designed for use with Model J truck made by Lewis-Shepard Products, Inc., Watertown, Me. The lift unit has two lift motors, two pumps, and one enlarged tank. With the new unit, the Model J will lift a 2,000-lb. load to 130 ins. in 23 secs.

Circle T-23 on Reader-Service Card

Measures Color Change

An instrument that measures the quantity of light received over a period of time to obtain data on color changes is being produced by Evans Electroselenium Ltd., Harlow, Essex, England. Elements of the instrument are a photocell, a cathode-ray discharge tube, and a counter; the rate of counting is proportional to the illumination. The instrument operates from a 230-v., 50-cycle, single-phase line.

Circle T-24 on Reader-Service Card

Black-Light Inspection Lamp

A new Blak-Ray ultraviolet lamp, Model 3X-4, particularly adaptable to the textile industry, has been announced by Ultra-Violet Products, Inc., South Pasadena, Calif.

Because the invisible rays make sub-

BENJAMIN

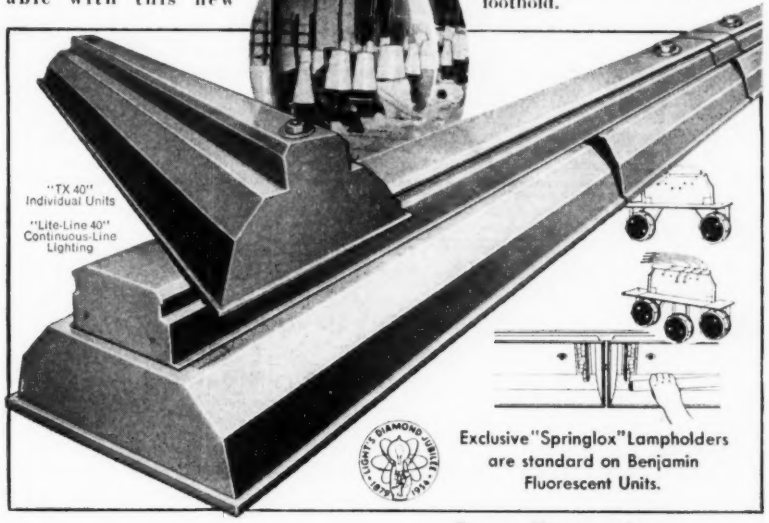
HUMIDITY-DEFYING

Textile Lighting Systems

Cut Maintenance and Replacement Costs

Porcelain-Enameled Channels with special provisions for moisture-proof line-wire entrance and conduit suspension, are now available with this new Benjamin "Lite-Line 40" Porcelain Enamel System. Especially designed to combat the excessively moist atmospheres found in textile mills, these units are completely protected against the danger of rust and deterioration due to moisture accumulation.

A virtually unbroken surface of durable Porcelain Enamel covers the channels. There is no place for rust to get a foothold.



Exclusive "Springlox" Lampholders are standard on Benjamin Fluorescent Units.

In locations where a lighting system of individual units is preferred, Benjamin "TX 40" Units meet all the requirements for long-life, trouble-free service in the highly-humid atmospheres found in the textile industry. This one-piece, All-Porcelain Enamel Unit completely protects against rust due to the accumulation of moisture. The one-piece steel construction, by virtue of which the channel becomes an integral part of the housing, makes possible a smooth, unbroken surface of "Life-Time" Porcelain Enamel. There are no cracks or crevices where moisture can collect. Special construction of tapped, cast metal suspension flanges, the same as those found in the "Lite-Line" System, prevents entrance of moisture around conduit stems.

Some Facts about "Springlox" Lampholders

Here are some of the tests which "Springlox" has passed in the Benjamin Development and Testing Laboratory:

(1) Humidity Chamber Test — 1000 hours in 95% humidity at a minimum temperature of 95° F.
(2) Spring and Contact Fatigue Test —8000 simulated lamp changes.
(3) Vibration Test—100 hours at 25 cycles per second.

Get Up-To-Date on Humidity-Defying TEXTILE LIGHTING! Send for LATEST, FREE DATA BULLETIN — Write Benjamin Electric Mfg. Co., Dept. EE, Des Plaines, Ill.

For more information, write direct or use Reader Service post card.

STEEL

Every kind in stock

Immediate shipment

Principal Products: Bars, Structurals, Plates, Sheets, Tubing . . . Carbon, Alloy and Stainless Steels, Machinery and Tools, etc.

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MICROMETRIC **products**

For Quality and Uniformity

Comb and Gill Box Aprons
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Condenser Aprons and Tapes
Converter Aprons

Exclusive Manufacturers of Leather Textile Specialties "For Those Who Want the Best"

Finest selection of hides available . . . choice of tannages . . . Thickness gauged to meet the most exacting requirements . . . excessive stretch removed . . . flexible waterproof splices . . .

As specialists in Drafting Aprons for the Worsted System, our workmen are experienced in selection and matching of hide areas to give "balance" and long life.

A trial order will please you with our service.

The HAY Line TEXTILE LEATHERS

JAMES E. HAY LEATHER CO., INC.

244 SMITH STREET • LOWELL, MASS.

Southern Representatives
Carolina Belting Co.—Greenville, S. C.
Booth No. 252

stances fluorescent, variations that are invisible in ordinary light stand out when exposed to an ultraviolet-ray lamp. The lamp is useful for observing, analyzing, and comparing materials, weaves, and dye lots; inspecting for flaws and variations; detecting invisible markings used for identification; and locating oil spots on fabrics and tracing them to their origin. Complete with tubes, the new model sells for $39.75.

Circle T-25 on Reader-Service Card

Self-Cleaning Evaporator

A self-cleaning evaporator that solves the problem of scale formation on heating surfaces with revolving stainless-steel wipers, which maintain nonscaling heat-transfer surfaces, has been introduced by Roots-Connersville Blower, a division of Dresser Industries, Inc., Connersville, Ind. The evaporator can be used to concentrate solutions; and, with modifications, it can be adapted to drying processes. Capacities range from 65 to 6,000 lbs. of distillate an hour.

Circle T-26 on Reader-Service Card

Automatic Hygrometer

Relative-humidity values can be read at a glance on the automatic hygrometer made by Tesa S. A., Renens-Lausanne, Switzerland. With the hygrometer, the eye notes the position of the top of a manometer column against chart lines on the surface of a plexiglass tube, from which the relative humidity is directly read to an accuracy of 2% at temperatures from 32 to 113° F.

Circle T-27 on Reader-Service Card

Brakemotor

A short over-all length is one of the features of the new integral brakemotor announced by Louis Allis Co., Milwaukee, Wis. The shorter length is made possible by using the motor-end bracket as an integral part of the brake. The units use disk brakes and are available in NEMA motor-frame sizes from 203 to 326. Brakes are designed to furnish maximum continuous duty, with torques from 3 ft.-lbs. in the smaller sizes to 50 ft.-lbs. in the largest sizes.

Circle T-28 on Reader-Service Card

Self-Leveling Crane

The newest development in Trak-Rak cranes, made by Chicago Tramrail Corp., 4000 Washington Blvd., Chicago, Ill., is an automatic self-leveling device, which stops the hoist at the selected rack on an even level to permit loading or unloading without maneuvering. The crane provides 100% selectivity of storage materials and operates in a narrow aisle to serve both sides.

Circle T-29 on Reader-Service Card

Wet-Dust Collector

The development of Type CW-1 centrifugal wet-dust collector for dust-control problems that cannot be solved with cloth

collectors has been announced by Pangborn Corp., Hagerstown, Md. These problems include: (1) high temperature or moisture, (2) explosive or combustible dusts, and (3) corrosive, abrasive, and obnoxious dusts.

Circle T-30 on Reader-Service Card

Vibration Analyzer

A portable electronic vibration analyzer, capable of balancing rotating parts at speeds up to 5,000 rpm. and tracing vibrations up to 20,000 cpm., has been announced by International Research & Development Corp., Columbus, Ohio. Analysis, particularly of high-frequency vibrations from defective bearings, electric-motor torque pulses, transformers, etc., is accomplished through electronic frequency and displacement circuits, which render data on panel meters. Accuracy to 10% is maintained on all three ranges, 0.001, 0.01, and 0.1 in. of full scale.

Circle T-31 on Reader-Service Card

Small Lubricating System

A compact lubricating system especially designed for small machine elements has been developed by Bijur Lubricating Co., Rochelle Park, N. J.

Called the L Special, the unit is a complete lubrication system, reservoir, filter, pump, and meter units, in a package 2¾ ins. high, 1⅜ ins. deep, and 1¼ ins. wide, which is smaller than a pack of cigarettes.

The reservoir holds 20 cc., and the pump can be adjusted to discharge a total of 0.6 cc., 0.45 cc., or 0.3 cc. each time the plunger is pulled.

Circle T-32 on Reader-Service Card

USEFUL ACCESSORIES FOR THE TEXTILE MILL

Liquid Detergent

Nacconol SL, a new liquid form of Nacconol synthetic detergent, is being produced by National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y. Nacconol SL is exceptionally light in color, has a pleasant odor, a low haze point, no precipitation at temperatures down to freezing, and a low salt content. Users of synthetic detergents can obtain a sample by writing the company. (T-33)

Valve for Oiling System

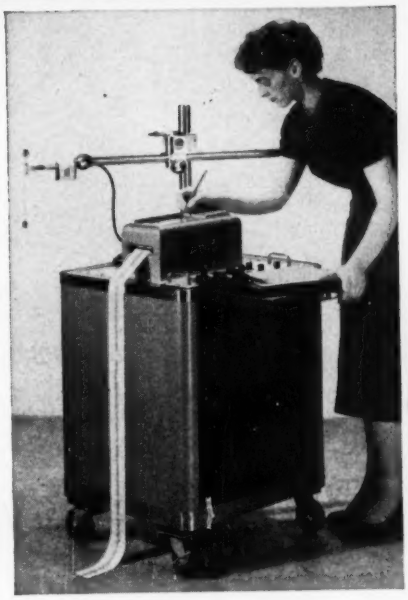
Production of a new heavy sight feed valve designed to control liquid volume and permit visual observation of flow has been announced by Oil-Rite Corp., Manitowoc, Wis. The valves are primarily designed for pressure or gravity oiling systems. (T-34)

Compact Fork Lift Truck

New series of compact gasoline fork lift trucks with a high power-weight ratio has been announced by The Yale & Towne Mfg. Co., Philadelphia, Pa. Called the G-52 Series, the trucks are available

NEW BRUSH TENSION ANALYZER*

MEASURES TENSIONS AT HIGH SPEEDS



● The Brush Tension Analyzer accurately measures and records instantaneous tension loads in filamentary materials—can be used during production of all natural and synthetic textiles as well as fine wire. The Analyzer measures both static tension levels and dynamic tension variations while the material is running at high production speeds. No manual plotting of data is required. For booklet write Brush Electronics Company, Dept. GG-9, 3405 Perkins Avenue, Cleveland 14, Ohio, or Southeastern Textile Instrument Office, 91 Cleveland Street, Greenville, South Carolina.

*Trade-Mark

BRUSH ELECTRONICS COMPANY

INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZO-ELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT
ULTRASONIC EQUIPMENT

formerly
The Brush Development Co.
Brush Electronics Company
is an operating unit of
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ALLENTOWN BOBBIN WORKS, INC.
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Cafeteria types
Models for remote installation
Coolers with vitreous china tops
Coolers with stainless steel tops
Bottle Coolers
Wall or Pedestal Fountains
No line of drinking-water equipment offers more than Halsey Taylor . . . in wide range of selection, in smart styling, in health-safety!
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See our catalog in Sweet's or write!
F-32
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COOLERS & FOUNTAINS

THE YARNS YOU BUY GO INTO THE CLOTH
. . . not into waste!
TOMPKINS
D-2
DOUBLE HEAD
SPRING NEEDLE
KNITTING MACHINE
SEE FOR YOURSELF . . . let us show you the Tompkins D-2 in production on whatever yarn or fabric you wish. Want to see samples of finished material? We'll knit up any material you specify — just send us the yarn!
OTHER TOMPKINS MACHINES
BEEF BAG KNITTER
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with pneumatic or solid tires in 2,000-, 3,000- and 4,000-lb. capacities. They are smaller, more powerful, more maneuverable, more efficient, and more versatile than older models. (T-35)

Drafting Tape

A new drafting tape has been introduced by Behr-Manning Corp., Troy, N. Y. The new tape will hold tracing paper or cloth firmly on drafting or drawing boards, come off the roll cleanly, apply easily, and leave no discoloring marks on the drawing paper or cloth. (T-36)

Liquid-Level Control

Probe fittings Series 67, made by Photoswitch Corp., 77 Broadway, Cambridge 42, Mass., offer flexibility, long life, and maintenance-free operation in level control of electrically conductive liquids. Designed for use with standard Photoswitch level controls, the probe fittings eliminate the need for stuffing boxes, floats, or any moving parts which could wear out and fail. (T-37)

Pallet Truck

Narrow-aisle, rider-type, electric low-lift pallet trucks with eight load wheels, arranged in dual, tandem fashion, are being built by The Raymond Corp., Greene, N. Y. Each wheel has a diameter of 3¼ ins. and a face of 2¼ ins. Wheel and floor wear is said to be very low. (T-38)

For Handling Long Loads

A swivel bolster assembly has been developed to handle loads that are too long for one trackless-train trailer. Made by Mercury Mfg. Co., 4044 S. Halsted St., Chicago 9, Ill., the assemblies can be attached to a single-caster steel trailer by inserting posts into the side stake pockets. Long loads can be snaked through narrow doorways and around corners by pulling the lead trailer with a tractor and guiding the rear trailer. (T-39)

Concrete Neutralizer

Safety is the feature of the neutralizer for preparing concrete surfaces for sealing and refinishing made by Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill. The liquid product is fumeless, odorless, and nonflammable, and it will not damage metal surfaces. (T-40)

Metal-Surface Primer

A new product for priming rusted metal surfaces that are impractical to sandblast is being manufactured by Emjay Maintenance Engineers, Rutherford, N. J. Called KIP 100, the new material is used on structural-steel installations and equipment. (T-41)

Air-Supply Filter

A compact air filter, designed to prevent dirt, oil, water, and other foreign matter from entering pneumatic instruments, has been announced by The Foxboro Co., Foxboro, Mass. The new filter has four major elements: a top cap with supply and outlet connections, a chamber with a drain

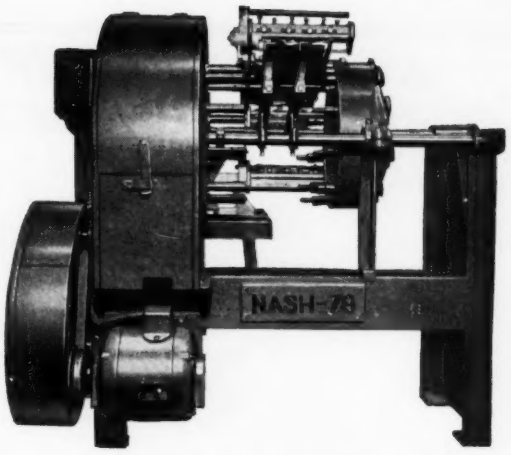
Clean-Buff-Polish

20 To 40 Bobbins Per Minute

AUTOMATICALLY

With This NASH No. 79

AUTOMATIC QUILL POLISHER



Steps Up Yarn Production With These Efficient Features

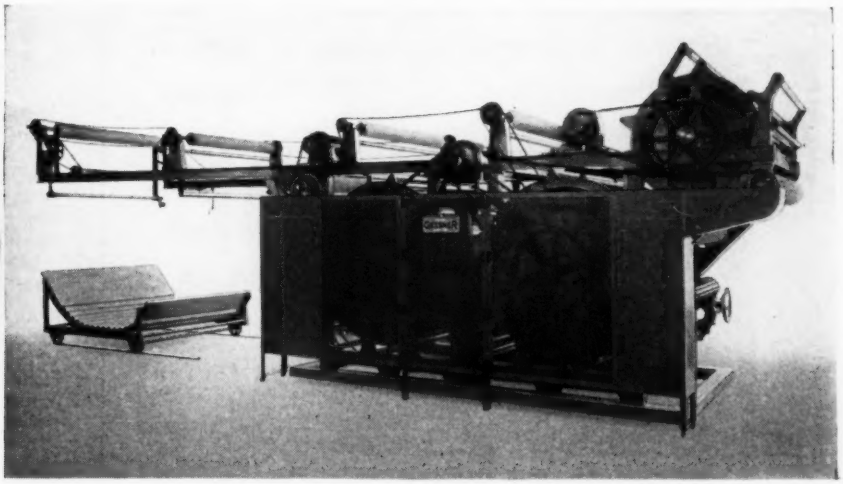
- Eliminates broken picks to assure smooth quills at all times . . .
- Burnishes quills to high lustre while removing all dirt from grooves . . .
- Trouble free operation.
- Preserves original finish coating of quills — no harsh abrasive action during operation . . .
- Improved yarn run-off — perfect quill polishing prevents transfer of dirt . . .
- Minimum maintenance costs, with maximum pad contact . . .

Write TODAY
For Illustrated Bulletin and Complete Specifications

J. M. NASH COMPANY

2365 N. 30th STREET MILWAUKEE 10, WISCONSIN

GESSNER'S New 60" Three Cylinder Gig



Gessner's newest development is this 60" triple cylinder Gig with the third cylinder for cross gigging. Cross gigging before laying runs not only improves the final finish, but also increases production as much as 50%. By the addition of a third cylinder on Gessner's new 60" Gig, cross gigging can be done without having to stop to change slats or reverse cylinders.

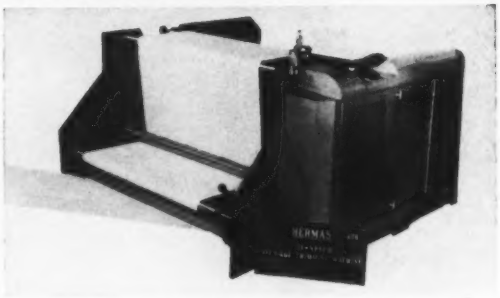
Send for our folder No. 2 on Gigs and Brushes.

DAVID GESSNER CO., WORCESTER MASSACHUSETTS

Canadian Representative: W. J. Westaway, Montreal, Quebec; Hamilton, Ont.

Gessner Improved Cloth Finishing Machines maintain a standard of performance to meet the exact requirements of your cloth finishing.

AT LAST . . . A *LOW COST HIGH SPEED* SELVAGE TRIMMER



THIS NEW LOW COST HIGH SPEED SELVAGE TRIMMER

cleans cloth at the selvages where most hanging thread removal is required today.

It removes all selvage threads at speeds up to 150 yards a minute—at one pass.

Equipped with two revolvers—one for the face, one for the back of the cloth. It will, at the same time, remove all hanging ends from face and back of cloth.

A loop clipper attachment converts selvage loops to hanging threads for trimming.

The trimming unit has its own integral section, exhaust and collection compartment.

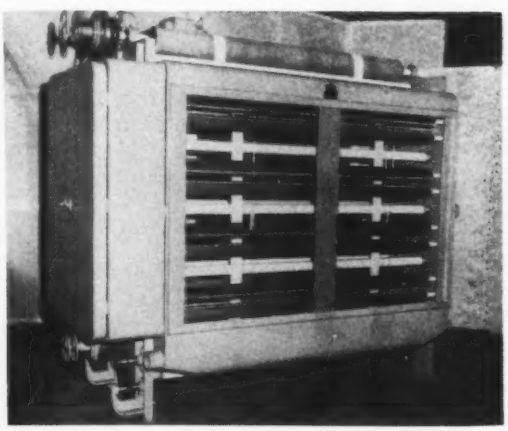
So in effect the new selvage trimmer does the work of a shear at a much lower capital investment.

The selvage trimming units may be mounted on existing machines, for cleaning one or both selvages.

Our representative will be glad to survey your needs and determine whether this selvage trimmer will meet them. No obligation.

HERMAS MACHINE CO.

WARBURTON AVENUE — HAWTHORNE, NEW JERSEY



VERTICAL HIGH SPEED NAPPER
(PATENTED)

FOR WOOLENS COTTONS SYNTHETICS OR MIXES WOVEN KNITTED OR FELTED

SEND SAMPLES FOR TEST NAPPING

OBSOLETES EVERY PLANETARY NAPPER

A flexible machine for any weight fabric producing any type nap. At cloth speeds to 200 yds. per min. Outproduces ten 36 roll planetary units. A better nap saving 10% dead loss.

SEE BOOTH #232 GREENVILLE EXPOSITION

PARKS & WOOLSON MACHINE CO.

SPRINGFIELD, VERMONT

cock at the bottom, a resin-impregnated filtering sleeve, and a water baffle. (T-42)

Electric Hoists

Electric hoists for overhead materials handling have been announced as a new product line by R. G. LeTourneau, Inc., Longview, Tex. Standard models in four-, five-, and six-ton capacities are available. (T-43)

Two-Hose Vacuum Cleaner

A portable vacuum cleaner designed to operate with two 50-ft., 1¼-in. hoses or one 75-ft., 1¼-in. hose has been introduced by U. S. Hoffman Machinery Corp., Air Appliance Div., 105 Fourth Ave., New York, N. Y. Powered by a 5-hp. engine, the cleaner is recommended for general housekeeping work. (T-44)

Cam Clutches

Heavy-duty cam clutches for overrunning, backstopping, and indexing applications on machinery drives are available from Morse Chain Co., 7601 Central Ave., Detroit 10, Mich. Called the MC series, the self-contained units include two ball bearings that maintain concentricity of the inner and outer races. (T-45)

20-Amp. Trolley

A 20-amp. trolley is available from Feedrail Corp., 125 Barclay St., New York 7, N. Y., for application to moving equipment such as cloth spreaders where a Feedrail 60 trolley busway electrification system is in use. The 20-amp. trolleys have a higher capacity than standard 60 trolleys. (T-46)

Packaging Film

Cellothene, a new flexible, transparent film laminate of polyethylene and cellophane, recommended for packaging goods such as hosiery, has been developed by the Cheslam Corp., a division of Chester Packaging Products Corp., Yonkers, N. Y. The film is sparkling, heat sealable, moisture-proof, tough, and leakproof. (T-47)

Chart Pen Lifted

An automatic pen-lifting device has been designed for single-record strip chart recorders, the Industrial Div. of Minneapolis-Honeywell Regulator Co., Wayne and Windrim Aves., Philadelphia, Pa., recently reported. A rod and lever arrangement, operated by a solenoid, raises the pen clear of the chart, depending on the requirements of the application. (T-48)

SO_2 Detector

A new sulfur-dioxide gas detector has been announced by Mine Safety Appliances Co., Braddock St., Pittsburgh 8, Pa. The instrument quickly determines SO_2 concentrations of 0 to 50 parts per million in the atmosphere of a working area. Ten parts per million is maximum for 8-hr. exposure. (T-49)

pH Test Papers

pH test papers are now available in wide widths and in rolls 600 ins. long. Ten

different test papers are available for various pH ranges from R. P. Cargille Laboratories, Inc., 117 Liberty St., New York 6, N. Y. (T-50)

Less Maintenance for Joints

Two new developments that cut maintenance time on mechanical syphon pipes in rotating rolls or drums have been introduced by Johnson Corp., Three Rivers, Mich. A new assembly plate holds the internal parts of the Type J rotary-pressure joint in position when the head is removed; and a hinged syphon elbow that connects two straight pipes and eliminates the need for a curved pipe. (T-51)

Line Voltage Read Directly

An accessory for snap-around volt-ammeters that makes possible instant line current and voltage readings under load conditions is available from Pyramid Instrument Corp., Lynbrook, N. Y. Direct readings up to 25 amps. are possible. (T-52)

Components for Making Foam

Components for making foam in densities as low as 2 lbs. per cu. ft. are available from Atlas Mineral Products Co., Houston 20, Tex. Used to make cushion backing for fabrics, the isocyanate foam is called Urefoam (T-53)

Twenty Pallet Trucks

Pallet trucks made with 2,600- and 4,000-lb. capacities and fork widths of 20½ and 27 ins. are available from Palitron, Inc., 40 W. 29th St., New York 1, N. Y. A fast-acting hydraulic pump gives a smooth lift of 5 ft.; and lowering is controlled. There are 20 models, depending on fork length, to choose from (T-54)

Knock-Out Pins

Knock-out pins are available from Marvel Industries, Inc., Sturgis, Mich. The pins are resistant to corrosion. (T-55)

Paint Rollers

Two new paint rollers have been introduced by Pittsburgh Plate Glass Co., 632 Fort Duquesne Blvd., Pittsburgh 22, Pa. One is a de luxe roller with an aluminum cylinder and a cover that will withstand emersion in paint solvent for 24 hrs. Price: $2.98. An economy model with a treated-cardboard core sells for $1.98. (T-56)

Electrical Conductivity Meter

A compact conductivity flow-cell assembly for determining the electrical conductivity of condensed steam and feed water has been developed by Hagan Corp., P. O. Box 1346, Pittsburgh 30, Pa. The assembly is used with a conductivity meter or recorder. (T-57)

Melting-Point Tester

An instrument for determining melting points in the organic laboratory has been

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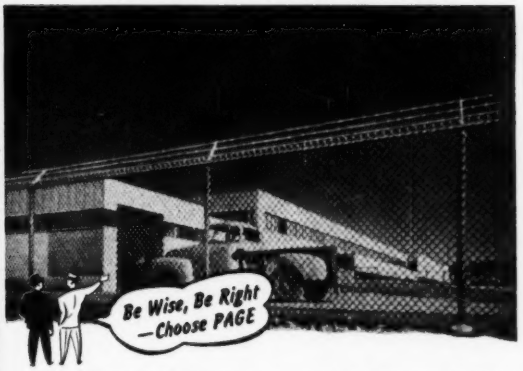

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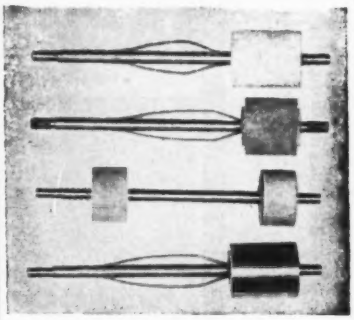

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improved by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. Accuracy is with 1 to 2° C. without calibration, ±0.5° C. with calibration. Price: $115. (T-58)

Truck-Ladder Combination

Step-Truk is the name given to a combination hand truck and step ladder by its manufacturer, Fairbanks Co., 393 Lafayette St., New York 3, N. Y. It is intended to be used for odd jobs around the plant. (T-59)

Anticorrosion Coating

Coated with plastisols, equipment used in corrosive atmospheres resists acids, alkalies, moisture, rust, and blistering. Coatings made of Bakelite vinyl-base plastisols are supplied by Quelcor, Inc., Front and Broomall Sts., Chester, Pa. The company will apply the coatings. The coating is fused to the surface by baking, and all kinds of equipment and parts can be coated. (T-60)

Floor Preserver

Bakeflex, a preparation for preserving floor surfaces, is available from Flexrock Co., 3600-G Filbert St., Philadelphia 1, Pa. Available in four colors, Bakeflex comes in formulations for wood and concrete . (T-61)

Water-Hardness Tester

Field tests of water hardness, sensitive to one grain per gallon (17.1 parts per million), require only a minute with a new Speedy-Kit announced by Calgon, Inc., and Hagan Corp., Box 1346, Pittsburgh 30, Pa. The method uses two bottles of solution and a glass vial. (T-62)

High Free-Lift Mast

A new mast assembly for fork-lift trucks is available as an optional feature from Towmotor Corp., Cleveland, Ohio. Installed at extra cost as original equipment, the assembly provides high free lift before increasing the over-all lowered height of the lift truck. (T-63)

Positive Photocopying

A single-unit photocopying machine that makes positive copies, black printing on a white background, is available from Copease Co., 270 Park Ave., New York, N. Y. In less than 45 secs., copies can be made of any written, printed, or drawn office record. (T-64)

Safety Lock for Radial Saw

Radial-arm, multipurpose woodworking machines can be equipped with an automatic carriage lock, which is being made by DeWalt Inc., Lancaster, Pa. The safety lock brakes the gliding action of the carriage when thumb pressure is released. (T-65)

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lifting without the use of pallets operates from a mechanism that permits all standard Towmotor Corp. (1226 E. 152nd St., Cleveland 10, Ohio) clamp arms to be attached. Standard forks can also be installed. (T-66)

Low-Cost Fork Truck

A 4,000-lb. gasoline-engine fork truck for outside work, with a speed of 14 mph., has been announced by The Baker-Raulang Co., 1230 W. 80th St., Cleveland 2, Ohio. Features are large pneumatic tires and a high ground clearance. Price is $2,985. (T-67)

Liquid-Level Gauge

A remote-reading liquid-level gauge is available from Jerguson Gage & Valve Co., 80 Fellsway, Somerville 45, Mass. With a visibility of 180°, the gauge has no stuffing box and gives an accuracy of ½% of scale reading. (T-68)

Combustion Safeguard

A combination oxygen and combustibles analyzer that attaches to a furnace to act as a combustion safeguard on gas-fired furnaces is available from Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio. (T-69)

Gear Motors

Gear motors with single (780 to 280 rpm.), double (230 to 45 rpm.), or triple (37 to 7.5 rpm.) speed reduction are available from Elliott Co., Crocker-Wheeler Div., Ampere, N. J. Frame sizes range from 1 to 150 hp. (T-70)

Tube Fitting

A tube fitting for locking and sealing at any location on a tube is available from Conax Corp., 4515 Main St., Buffalo 21, N. Y. The ferrule is deformed against the tube to give a seal without cutting the tube surface. (T-71)

Pressure Cell

A new transducer has been introduced by The Foxboro Co., Foxboro, Mass. The element converts fluid pressure into a proportional a.c. voltage, which is measured in terms of pressure by an electronic resistance Dynalog instrument. Accuracy is ½% at any point from 0 to 10,000 psi. (T-72)

Box Stitcher

A new box stitcher is available in five different types—post, arm, combination post and arm, side seam, and top—from Acme Steel Co., 2840 Archer Ave., Chicago, Ill. A small hand lever adjusts the stitcher to handle 1/16- to ¾-in. working thicknesses of corrugated and solid-fibre boxes. (T-73)

Floor-Truck Brake

A brake for hand trucks, controlled from a bar on the push handle, is available from Towsley Trucks, Inc., 1766 Elmore St.,

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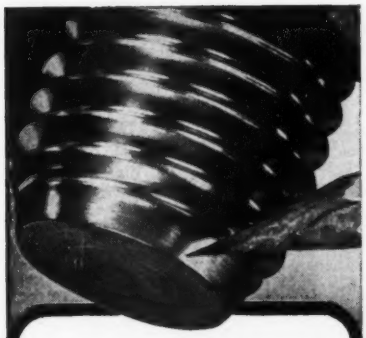

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Cincinnati 23, Ohio. The truck speed can be controlled by gripping the brake. (T-74)

Filter-Regulator

A combination filter, regulator, and lubricator for compressed air lines is available from CCA Products Div., Breco Mfg. Co., 309 E. Saratoga St., Baltimore 2, Md. A transparent bowl shows when the filter is dirty. The unit, besides acting as a lubricator, regulates pressure, bleeds down stream lines, and acts as shut-off valve. (T-75)

Floor Maintenance

Four heavy-duty floor-maintenance machines have been announced by Clarke Sanding Machine Co., Muskegon, Mich. Brush diameters are 13, 15, 17, and 23 ins., with motor ratings of ¼, ½, ¾, and 1 hp. respectively. Accessories for scrubbing, waxing, polishing, etc. are available. (T-76)

Hydraulic Lift Table

A lift table powered by a hydraulic pump is available from Beacon Machinery, Inc., East Saint Louis, Ill. Standard models come in 4,000- and 10,000-lb. capacities with 36x84-in. dimensions. Low height is 12½ ins. from floor; raised height is 43 ins. (T-77)

Utility Hose

A wire-reinforced utility hose has been developed by Quaker Rubber Corp., Div. of H. K. Porter Co., Inc., 1932 Oliver Building, Pittsburgh, Pa. The hose can be used for air, oil, water, gasoline, spray, and hydraulic lines at working pressures as high as 1,500 psi. (T-78)

Uneven Spinning Drafts

CONTINUED FROM PAGE 109

it is assumed that roll diameters are all the same, as listed by the supplier or as measured with calipers; but it is not unusual to find rolls 0.005 in. larger or smaller than the average diameter.

Suppose you are spinning 32s with a 16 draft, 2.00 hank roving, and back and front rolls with a nominal diameter of 1 in. The actual diameters might vary from 0.995 to 1.005 ins. At one extreme, the actual draft is:

$$\frac{16 \times 1.005}{0.995} = 16.16$$

At the other extreme, the actual draft is:

$$\frac{16 \times 0.995}{1.005} = 15.84$$

Now, if the roving from the card

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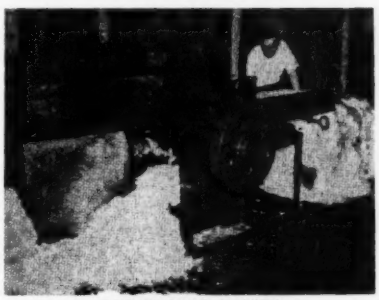

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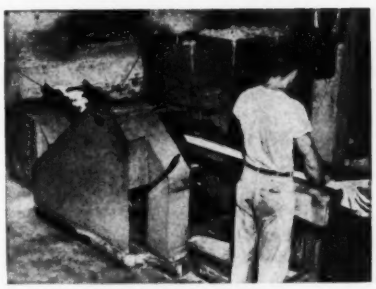

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room is within a range of 1.98 to 2.02 hanks, you can consider yourself fortunate. If the finer 2.02 hank roving is drafted with the actual draft of 16.16, the yarn number is:

$$2.02 \times 16.16 = 32.64$$

And if the coarse 1.98 hank roving is drafted with an actual draft of 15.84, yarn number is:

$$1.98 \times 15.84 = 31.36$$

So under these conditions, the yarn number would have a normal variation of at least 1.28.

Slipping Rolls

It is also assumed in draft calculations that the surface speeds of top and bottom rolls are the same. Common sense tells us this is not true; since one is driven by frictional contact with the other, some slippage must occur. With short-cut processing and the elimination of doublings, this slippage is becoming more important.

Let's spin the 32s again with a calculated draft of 16, a roll speed of 160 rpm., and 1-in.-dia. front rolls, top and bottom. Suppose the top roll is so badly lubricated and choked with fly, or the weighting arrangement is so inefficient, that the top roll revolves at only 100 rpm. At what rate will the yarn be delivered?

In all probability, delivery speed will be close to the mean of the two surface speeds, a speed equivalent to 130 rpm.

$$\text{Speed of back roll} = \frac{160}{16} = 10 \text{ rpm.}$$

$$\text{Draft under those conditions} = \frac{130}{10} = 13$$

$$\text{Actual yarn number} = 2 \times 13 = 26\text{s}$$

Now we have something to worry about. Every experienced spinner has encountered such coarse yarn at times when there was no possibility of mixed roving, off-standard roving, or wrong gears. At such times, he probably has been giving the frame a good cleaning and lubrication to cure the trouble. To check the possibility of this large variation, reduce the effective weighting of a front top roll and its motion with your finger while a length of yarn sufficient for testing is spun.

To prevent this possible variation, keep the front rolls clean and well-lubricated, and keep the weights acting effectively.

Since this large variation is possible, the smaller variations that keep coming up could be partly related to this cause, especially after they have run a long time and the roll flutes are losing their gripping power. To improve yarn

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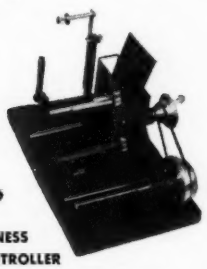

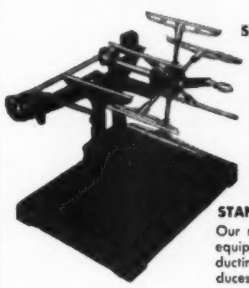

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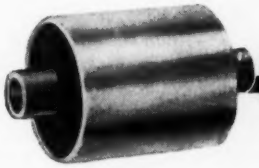

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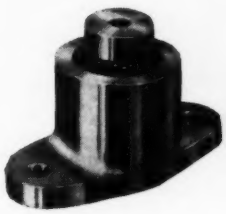

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uniformity and decrease the end-breakage rate, why not swap the back and front rolls? The back-roll flutes do not carry as much work as the front rolls, and excellent results have been gotten by changing them about.

To summarize the more common origins of yarn-number deviation at the ring frame:

1. Roving stretched between creel and back roll by blunt or dirty creel pegs, choked traverse guides, or sudden movements of the traverse guides
2. Excessive yarn tension at bottom or top of the bobbin caused by an inadequate bobbin-over-ring-diameter ratio or an insufficient space between top of bobbin and thread guide
3. Machine imperfections and adjustments
4. Slippage between top and bottom rolls
5. Spindle-tape slippage causing different yarn twists, which results in different degrees of strain under the same yarn tension
6. Various conditions of rings, travelers, and thread guides causing different tensions and thus variable yarn extensions

Eccentric Rolls One Cause of Thick and Thin Places

Drafting elements not adjusted to the staple length or nature of the material being processed will cause irregular yarn, although the sizings may be everything to be desired. The effect of strained rolls, loose roll connections, eccentric rolls, or anything that causes nip movement need more attention than ever before because of the increasing use of high drafts.

Consider the case of a top roll that is $\frac{3}{32}$ in. eccentric. Let's suppose that you are spinning 32s with a draft of eight between two pairs of rolls, and the top roll of the front pair is $\frac{3}{32}$ in. eccentric. (Fig. 1 is an illustration of this situation.)

With a top-roll eccentricity of $\frac{3}{32}$ in., the possible nip movement of the front pair of rolls is $\frac{3}{16}$ in., or double the eccentricity.

With a draft of eight, the front rolls will make eight revolutions for every revolution of the back rolls, and the nip of the front rolls will make eight complete oscillations. For every half revolution of the front roll (and $\frac{1}{16}$ revolution of the back rolls), the nip will make a $\frac{3}{16}$-in. movement.

In spinning 32s with the draft of eight, the back pair of rolls will deliver 4s stock. Now what is the maximum yarn variation between the two sets of rolls? Assuming the rolls are 1 in. dia., the drafts can be easily calculated:

With the front nip moving 1/16 in. backward,

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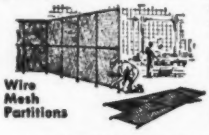

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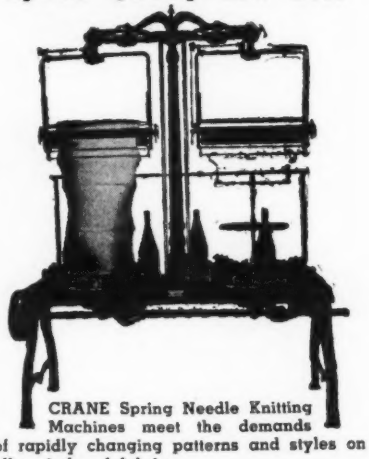
Experts in Metal Fabrications since 1886

Stewart IRON and WIRE FENCES

1870 CRANE 1954

SPRING NEEDLE KNITTING MACHINES

Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weigths of fabrics

CRANE
MANUFACTURING CO.
LAKEPORT, N. H.

CUT PRODUCTION COSTS WITH OUR NEW PATENTED* ROTO-TIES

When you install ROTO-TIES Spring Equipped Double Cone Ties on your Rotating Yarn Rack Knitting Machines you:

1. Increase your production of knitted goods by cutting machine stoppages for yarn reloading
2. Reduce excessive loss of yarn waste
3. Save on cost of smashes
4. Reduce press-offs caused by cones running out.

Complete details sent upon request.

*Patent No. 2460753

ROTO-TIES COMPANY

449 TILGHMAN ST. ALLENTOWN, PA.

what a "hand"!

when you finish with . . .

VINREZ 202

the superior polyvinyl acetate emulsion

- **Extreme Clarity of Film**
- **Excellent Stability**
- **Compatible With All Types of Softeners and Starches**
- **Increased Resistance to Abrasion**

STEIN HALL

285 Madison Ave. New York 17, N. Y.

Established 1866

Branch offices in 17 cities in the United States and Canada.

EMPIRE

REG. U. S. PAT. OFF.

TEXTILE MILL CRAYONS

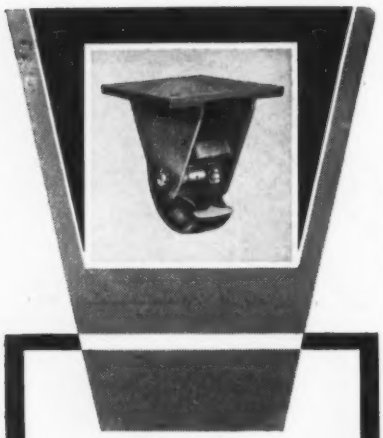
The preferred Crayon in the Textile industry . . . .

WHEN MARKING COUNTS, YOU CAN ALWAYS COUNT ON EMPIRE CRAYONS!

Made in 18 brilliant Colors in both large and small sizes.

Write for free marking guide!

the AMERICAN CRAYON company
SANDUSKY, OHIO NEW YORK



Why the Textile Industry looks to DARNELL for CASTERS & WHEELS

Darnell Engineers have given special study to Caster and Wheel usage in Textile Mills - have developed many models of casters and wheels to meet the demands of efficient, economical intra-plant movement of materials. It will pay you to consult a Darnell distributor when considering casters and wheels, either for new equipment or replacement.

• • • •

DARNELL CASTERS & WHEELS
Always
SWIVEL and ROLL

GET THE FACTS
Free Manual

DARNELL CORP., LTD.
DOWNEY, (Los Angeles County) CALIF.
60 Walker Street, New York 13, N.Y.
36 North Clinton, Chicago 6, Illinois

Length delivered by the front roll $= \frac{\pi}{2} + 1/16$

Length fed to the front roll $= \frac{\pi}{16} + 1/16$

Draft = 6.52

So the yarn delivered with this draft will be:

$$6.52 \times 4 = 26.08s$$

During the half revolution when the nip is more forward

$$\frac{\frac{\pi}{2} - \frac{1}{16}}{\frac{\pi}{16} - \frac{1}{16}} = 11.51$$

Yarn number: $11.51 \times 4 = 46.04s$

On every revolution of the front rolls, the yarn is varying roughly between 26s and 46s.

With a higher draft, the variation is much greater. Using the same example with a draft of 16, the draft will actually vary between about 10 and 42; and the yarn number will vary from about 20s to 84s on every revolution of the front rolls.

The above calculations show that the most uniform yarns will be produced with: (1) rolls as nearly round as possible, (2) rolls with large diameters, and (3) low drafts.

With high-draft spinning, the spinning overseer must closely watch roll concentricity and anything else that causes nip movement.

We have considered only one cause of nip movement. Here are some other causes that need watching:

1. Loose roll bearings
2. Worn roll necks
3. Worn top-roll pivots on solid-brass rolls
4. Varying compressibility of roll coverings
5. Varying thickness of coverings
6. Unmatched loose bosses
7. Badly bored loose bosses
8. Loose cap bars or cap nebs.

Flammable Fabrics

CONTINUED FROM PAGE 58

Good until Jan. 1, 1955

CTAT-B-21 73x58; 1.88 oz.; dotted swiss; in resin finish

V. 50% Cotton-50% Orlon

Good until Jan. 1, 1955

CTAT-B-23 60x52; 1.7 oz.; cotton-Orlon voile; in plain and starched finishes

CTAT-B-24 76x72; 1.87 oz.; cotton-Orlon lawn; in plain and starched finishes

VI. Sheers and Nettings

Good until Oct. 1, 1954

CTAT-B-26 100x72; 1.98 oz.; Bemberg crepe; printed finish

DOLCOWAX
FOR BEAUTIFUL FLOORS
Plus IMPROVED SLIP-RESISTANCE

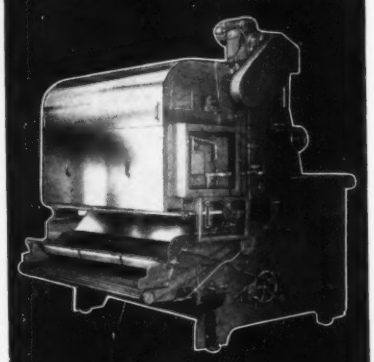
DOLCOWAX gives *any* type of flooring a soft, lovely finish, pleasing to the eye and safe to the tread. Its lustre lasts for many weeks—*actually improves with traffic.* Made of the finest-quality premium wax, with "built-in" safety factor which has gained its approval by Underwriters Laboratories as a slip-resistant wax.

Easy to apply; dries to a hard, durable film of long-lasting beauty — *with anti-slip protection!*

Write for literature on floor finishes; your DOLGE SERVICE MAN will be glad to advise you on your specific floor-finish problems.

Dependable DOLGE
WESTPORT, CONNECTICUT

Geo. S. HARWOOD & Son



SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

50 LAGRANGE STREET
WORCESTER 8, MASS.

Performance Proves

HERBERT OXY COLD BARS ELIMINATE STATIC

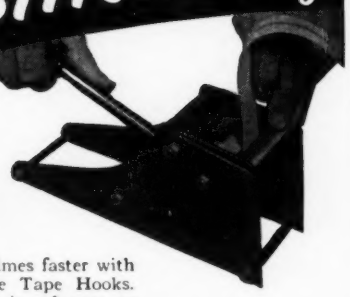
Where Others Fail!

Measure up the Herbert Oxy Cold Bar with any other means of static elimination . . compare point by point . . . let the facts prove what thousands of users already know! Oxy is your best investment, for any material and on any equipment, in terms of efficiency, safety, and cost-saving performance. *For full specifications and prices, please forward details of your machine.*

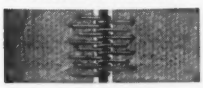
HERBERT PRODUCTS INC.

74-34 Jamaica Ave. Woodhaven 21, N. Y.
Phone: Michigan 2-4887

10 TIMES FASTER THAN STITCHING!



SPINDLE TAPE LACING EQUIPMENT



Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

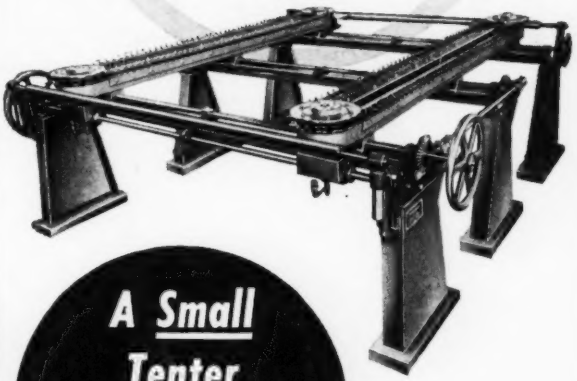
CONDENSER TAPE LACING EQUIPMENT

Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN

Clipper BELT LACING EQUIPMENT

Order M&W TENTERETTES



A *Small* Tenter For Your *Special* Needs

M & W Tenterette: 30", 80" or 100" long, using our No. 12 tenter clip. We build to any maximum width, with either straight or hinged rails. Serves many uses.

These short tenters are made *only* by M & W — one of our specialties, developed to answer special needs in many foremost finishing plants.

We can promptly supply full data — advise you how M & W Tenterettes, and other devices like our Constant Tension Batchers, can fill long-felt needs in your plant that no other machinery satisfies. Write today for information on —

√ *Tenterettes*
√ *Constant Tension Batchers*

Ask for details without obligation.

MARSHALL and WILLIAMS CORPORATION
PROVIDENCE, R. I. • GREENVILLE, S. C. • NEW YORK, N. Y.

THE NEW
POLYMER
DEVELOPED
POLYGUMS
MAKE PRACTICAL
A NEW
"FLASH AGE"
OF VAT COLOR PRINTING

Now, for the first time, POLYMER's development of "controlled behavior" Polygums makes the "Flash Aging" process of vat printing not only entirely practical, but extremely advantageous from almost every production standpoint.

These new POLYMER Polygums afford a "Flash Age" printing operation that:—

- Cuts time for aging from 8-12 minutes to 10-30 seconds!
- Makes 2-batch operation entirely practical.
- Saves floor space and labor costs.
- Lowers costs of dyestuffs, thickeners and other processing chemicals.
- Makes wider-range color selection possible.
- Improves appearance of vat printed fabrics.

Write or wire your nearest Polymer office today for details and technical service.

POLYMER
INDUSTRIES
SPRINGDALE, CONN.

POLYMER
SOUTHERN
GREENVILLE, SOUTH CAROLINA

Flammable Fabrics (Continued)

CTAT-B-38	81x78; 1.5 oz.; acetate ninon; regular finish
CTAT-B-47	13x49; 0.7 oz.; nylon tulle; melamine-resin finish
CTAT-B-48	20x95; 0.6 oz.; nylon tulle; heat set only

Good until Jan. 1, 1955

CTAT-B-25	38/2x70; 1.9 oz.; acetate ninon; loom finish
CTAT-B-28	38/2x78; 1.7 oz.; acetate ninon; loom finish
CTAT-B-29	112x60; 1.9 oz.; acetate and nylon sheer; resin finish
CTAT-B-30	107x97; 0.9 oz.; nylon ninon; resin finish
CTAT-B-31	80x70; 1.79 oz.; acetate sheer; resin finish
CTAT-B-39	54x32; 1.1 oz.; Orlon leno; resin finish
CTAT-B-42	112x88; 1.44 oz.; crepe silk; plain finish

Permanent (Did Not Ignite)

CTAT-B-27	54x34; 0.94 oz.; nylon marquisette; resin finish
CTAT-B-32	79x72; 1.6 oz.; Dacron leno; resin finish
CTAT-B-33	80x68; 1.5 oz.; nylon skip-dent leno; resin finish
CTAT-B-34	80x68; 1.5 oz.; nylon leno; resin finish
CTAT-B-35	81x68; 1.45 oz.; nylon leno; resin finish
CTAT-B-36	89x71; 1.6 oz.; nylon leno check; regular finish
CTAT-B-37	116x95; 0.9 oz.; nylon sheer; regular finish
CTAT-B-40	92x63; 1.6 oz.; Dacron leno; regular finish
CTAT-B-41	128x3x96; 1.41 oz.; dobby striped nylon sheer; regular finish
CTAT-B-43	52x40; 1.0 oz.; nylon marquisette; melamine finish
CTAT-B-44	52x34; 0.85 oz.; nylon marquisette; melamine finish
CTAT-B-45	68x49; 0.8 oz.; monofil nylon marquisette; melamine finish
CTAT-B-46	59x37; 1.0 oz.; Dacron marquisette; melamine finish

VII. Puckers

Good until January 1, 1955

CTAT-B-49	100x96; 1.03 oz.; nylon pucker; resin finish
CTAT-B-50	113x98; 1.0 oz.; nylon pucker; regular finish

Permanent (Did Not Ignite)

CTAT-B-51	84x84; 1.55 oz.; nylon sheer; printed finish
CTAT-B-52	76x70; 1.61 oz.; Orlon and nylon check; regular finish
CTAT-B-53	100x88; 1.68 oz.; novelty pucker-stripe nylon; regular finish

VIII. Taffetas and Twills

Permanent (Did Not Ignite)

CTAT-B-54	106x80; 1.4 oz.; nylon; resin finish

less than 1/10 cent per day—

TO GET RID OF STATIC!

Actual operating cost of the SIMCO *"Midget"* is less than 1/10c per day... yet it is the most effective static eliminator available for any textile machine! Send for free folder.

the SIMCO company
920 Walnut St.
Lansdale, Pa.

IT TAKES TWO

DISPLAY ADVERTISING
• Arouses Interest • Creates Preference
DIRECT MAIL
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Please forward my free copy of the McGraw-Hill "Industrial Direct Mail Catalogue."

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New color Television represents "Keeping in Step with the Times," as do these developments

An Important Message to all producers of Knitted Wear

NOW FOR HIGHER PROFITS AND LOWER OPERATING COSTS . . .

THIS IS THE Right MACHINE FOR YOU! . . .

The Wildman Cylinder Needle Revolving Fabric Machine . . .

This machine is right for you because the new look in your operating costs and profit picture can be seen in the production of so many items — underwear, outerwear, sportswear, beachwear, dress, nightwear, foundation, children's stockinet — and it is available in several styles for plain, tuck, float stitching.

It's right because it is engineered with all modern mechanisms that are applicable to machine designs specified.

It's right because it is now available in all sizes up to and including 36 inch; in all gauges up to 34 needles per inch; and in multiple feeds . . . Belt or individual drive.

Check the WILDMAN Cylinder Needle Revolving Fabric Machine. Inquire today for complete information.

WILDMAN

MFG. CO., NORRISTOWN, PA.

MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

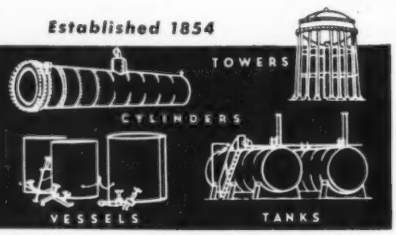
Five Extra Reasons..
USE HINNEKENS CONTINUOUS BOIL-OFF
Dyers and Finishers the world over choose HINNEKENS Boil-Off, the flexible machine that evenly sets and shrinks all materials in continuous full widths. Lets take an inside look at some of its special construction features!
1 Goods are opened to full width by opener and rubber expanders between boil-off tank and squeeze rolls.
2 Surplus bath liquid is pressed out by squeeze rolls and returned to bath tank for re-use.
3 Chemical residue removed by washing goods on both sides with stainless steel vertical spray.
4 Excess wash liquor removed from goods by squeeze rolls before batching for jig type dyeing.
5 Take-up rolls goods on shells for jig type dyeing. If desired, Pleater loads goods on trucks.
Write for complete information!
HINNEKENS
MACHINE COMPANY, INC.
199-221 GODWIN AVE., PATERSON 1, N. J.

THE FIRST HUNDRED YEARS

FROM a small iron-works in 1854, we have been fortunate in growing to be one of America's largest metal fabricating industries . . . For the privilege of celebrating our Centennial, we express our appreciation for the friendship of four generations of customers, and the loyalty of four generations of workers.

R.D. COLE
MANUFACTURING CO.
NEWNAN, GA.

Established 1854



Flammable Fabrics (Continued)

CTAT-B-55	168x106; 1.64 oz.; silk twill; printed finish
CTAT-B-56	180x94; 1.65 oz.; silk taffeta; plain finish
CTAT-B-57	156x86; 1.85 oz.; dobby silk; melamine finish
CTAT-B-58	156x86; 1.85 oz.; silk twill; melamine finish
CTAT-B-61	128x106; 1.64 oz.; silk twill; printed finish

IX. Warp-Knit (Tricot)

Permanent (Did Not Ignite)

CTAT-B-59	16 wales, 8 courses; 0.55 oz.; nylon tulle; resin finish
CTAT-B-60	48 wales, 56 courses; 1.4 oz.; nylon tricot; regular finish

For plain-surface fabrics that weigh less than 2 oz. per sq. yd., class tests are limited to fabrics of the same fiber composition, construction, and finish type. The class tests listed may be used only for fabrics of the same fiber, construction, weight, and finish type as those published.

Persons wishing to make guarantees on a class basis of goods conforming to this listing may do so by retaining a swatch of the guaranteed fabric, identified by the number of the test and the finish type where several finish types appear under a single number.

The fabrics listed are among the more widely used types of lightweight fabrics. However, many types of these lightweight fabrics or fabric-finish combinations are not covered by this series because the testing data were not available. A later publication of class tests on such light fabrics is anticipated.

Acceptable Wool Fabrics

Instead of publishing the names of individual acceptable fabrics, the National Association of Wool Manufacturers lists two general classes of acceptable fabrics. Guarantees can be given on the basis of fabrics falling into either of these classes.

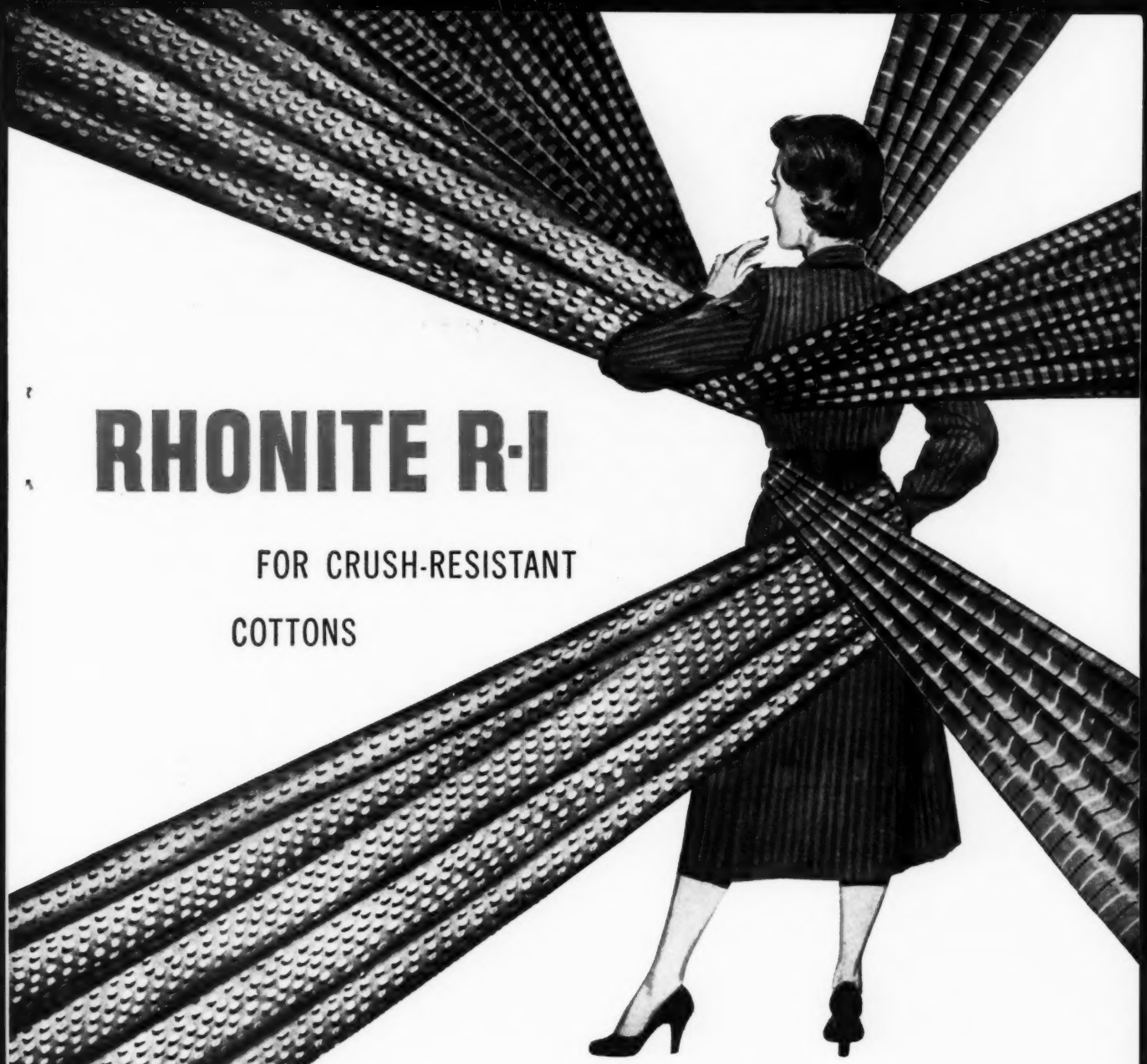
1. NAWM Class Test PS 6-54

Plain-surface fabrics containing by weight 25% or more of wool, reprocessed wool, or reused wool and weighing 2 oz. or more per sq. yd. exclusive of metallic ornamentation.

Excluded are fabrics containing nitrocellulose fiber, finish, or coating; fabrics of lace, mesh, or net construction; fabrics hand knitted or crocheted; and fabrics containing fibers not in commercial use prior to June 1, 1954.

2. NAWM Class Test RFS 6-54

Raised-fiber-surface fabrics containing by weight 25% or more of wool, reprocessed wool, or reused wool and weighing 6 oz. or more per square yard exclusive of metallic ornamentation and having at least 90% protein fiber in the raised-fiber surface. Exceptions for this class are the same as in Class PS 6-54.



RHONITE R-I

FOR CRUSH-RESISTANT COTTONS

For cotton dress goods that are permanently crush-resistant, you can depend on RHONITE R-1. This washfast resin imparts to cottons, rayons and blended fabrics a crush-resistance and stability so durable that repeated washings can't dull their crisp good looks.

In plain, calendered or embossed finishes, RHONITE R-1 produces this same resistance to crushing and wrinkling, makes fabrics withstand many launderings and still retain a lasting beauty.

For unusual crush-resistance, it pays to use RHONITE R-1.

Write or call for complete information about RHONITE R-1—one of the quality chemicals for textile finishing made by Rohm & Haas Company.

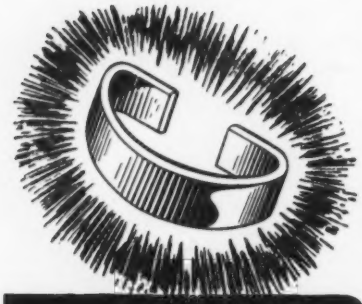
TEXTILE CHEMICALS

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

RHONITE is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.



DARY
Ring Travelers

FIFTY YEARS
IS A
LONG TIME

For fifty years and more, Dary ring travelers have enjoyed a sound reputation in the textile trade. We at Dary are proud to have maintained that reputation so consistently—because half a century is a long, long time.

Our experience is yours to command. Consult your friendly Dary representative!

Always specify
DARY Ring Travelers

THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
LINDSEY L. PHILLIPS, TREASURER, TAUNTON, MASS.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD RHYMER, BOX 2261, GREENVILLE, S. C.

News OF THE MONTH

Industrial Relations

In a speech at the Southern Industrial Relations Conference in Blue Ridge, N. C., James C. Worthy, Assistant Secretary of Commerce, said, "There is no easy way to improve employee relations. Basically, the problem is moral and ethical. Attempts to deal with it without facing up to this fact are sterile."

News Briefs

► Louisiana is the 17th state to adopt a right-to-work law. The law, which went into effect July 28, prohibits compulsory union membership.

► Bemis Bro. Bag Co. sponsored two college professors on a six-week summer study of its organization and operations in cooperation with the Foundation for Economic Education, which directs a College-Business Exchange Program. The six-week study was made largely through interviews with supervisory and executive personnel.

► Cone Mills has developed an improved 65-35 blend of Dacron and viscose that is washable, quick drying, and needs little or no ironing. Crease retention is a feature. The fabric is made with two-ply warp and filling yarns in 45-in. widths, 9¼- to 10- and 10¼- to 11-oz. weights.

► A continuous-dyeing process for Dacron, under the trademark Hertaine, has been developed by Fontaine Converting Works, Inc., Martinsville, Va. The process is reported to reduce pilling.

► Burlington Mills has bought controlling interest in Pacific Mills and Goodall-Sanford, Inc. The Palm Beach operation of Goodall-Sanford will be sold. Reasons given for the purchases are: (1) the growing importance of blends, (2) strong brand names and experienced personnel, (3) economies through joint effort in using facilities.

Research

► Two new projects are expected to start soon at Textile Research Institute, Princeton, N. J. One is a long-range study of the oxidation of cellulose as related to flame resistance, sponsored by the Office of the Quartermaster General. The other is a fundamental study of the felting of wool, sponsored by firms in the woven and nonwoven felt industries.

► An agreement to investigate both the cyanoethylation of cotton fabric and its uses has been entered into by the Institute of Textile Technology, Charlottesville, Va., Fulton Bag and Cotton Mills, Atlanta, Ga., and Monsanto Chemical Co., St. Louis, Mo. An experimental unit will be installed at Monsanto's Texas City, Tex., plant to produce treated cloth for field evaluation.

► A comparison of American and Egyptian cottons by measurement of fiber properties, with emphasis on the newer instruments, is in progress at Southern Regional Research Laboratory, New Orleans, La.

► Fabric Research Laboratories, Boston, Mass., has received a contract from the U. S. Dept. of Agriculture to develop cotton fabrics with improved draping qualities for specific uses. The contract will run for two years.

► At Clemson College, a study of 105 cottons, representing a wide range of fiber properties, showed that a more-correct ranking of cottons in terms of yarns to be spun is gained in flat-bundle measurements if the jaws of the tester are spaced 2 to 4 mm. apart instead of touching.

Fiber News

► Fiberglas yarns will be shipped on expendable hardwood pallets at no extra cost from any of the three Owens-Corning Fiberglas plants. Each pallet holds 1,200 to 1,500 lbs. of yarn.

► Prices for rayon staple have been raised by Hartford Rayon Co. Bright and dull staple will sell for 34¢ a lb. Viscalon No. 44, special carpet staple in 8 and 15 dens., bright or dull, is priced at 36¢ a lb.; Viscalon No. 66, a crimped staple for tufted carpets, now sells for 35¢ a lb.

► Australian production of shorn wool for the 1954-55 season is estimated at 3,900,000 bales, of which 76% will be Merino and the rest crossbred. The estimate is about 32,000 bales below last year's figure.

the NEW Model "E" KIDDE KNITTER Features... SEALMASTER BALL BEARING UNITS!

Kidde Knitter

KIDDE MANUFACTURING CO., INC.
BLOOMFIELD, NEW JERSEY

FACTORY REPRESENTATIVES AND DEALERS ARE LOCATED IN ALL PRINCIPAL CITIES

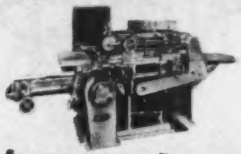
Back when the textile industry was in its infancy, Elias Howe's 250 stitch-a-minute sewing machine startled the trade by besting five skilled hand sewers. Textile machinery manufacturers have since made some terrific strides. Recent news from the *Kidde Manufacturing* Co. plant, concerns the production records being made on the firm's *Model "E" Kidde Knitter*—reported to be the fastest machine of its type. Production speeds up to 500 courses with 2 guide bars, up to 400 courses with 4 guide bars, are being maintained on a 24-hour schedule.

SEALMASTER and *Kidde* engineers have worked in close cooperation during development of the *Model "E" Knitter*. As many as 50 SEALMASTER self-aligning, permanently-sealed Bearing Units are used on each machine; assuring highest speeds, minimum maintenance and cleaner production—all important items to any mill operator.

When buying or building machinery, insist on SEALMASTER BEARING Units. SEALMASTER engineering assistance and service is always as near as your phone.

SEALMASTER BEARINGS A Division of STEPHENS-ADAMSON MFG. CO., 10 Ridgeway Ave., Aurora, Ill.

For more information, write direct or use Reader Service post card.



"WE RECOMMEND THIS LUBRICANT TO OUR CUSTOMERS"

—says PACKAGE MACHINERY COMPANY
Springfield, Mass.

"We have found LUBRIPLATE Lubricants to be very effective and use them extensively in our machines. To assure the proper use of LUBRIPLATE Lubricants for re-lubrication, we place tags on our machines before shipment. Thus the purchasers of those machines know the LUBRIPLATE Product we recommend for each application and where to obtain it."

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

Fiber News *(continued)*

► Saran monofilaments in 20 colors for woven webbing, slings, and similar furniture coverings have been introduced by National Plastic Products Co., Odenton, Md.

► Fiber X-100, a modified acetate filament and staple fiber developed by Celanese Corp. of America, is reported to be ready for commercial production.

► A bright cotton outlook for the 1954-55 season has been forecast by the Dept. of Agriculture. Domestic consumption is predicted to increase 60,000 bales.

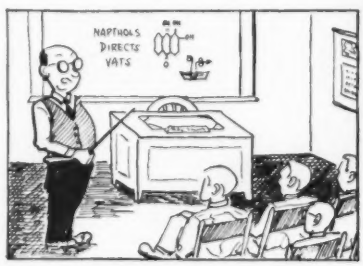
Consumption

► Data compiled by the Textile Fibers Dept. of Du Pont show that from 1937 to 1952, consumption of the man-made fibers increased 331%, while the combined consumption of cotton, wool, silk, and linen increased 10%. The biggest increase in man-fiber consumption was for industrial products.

► With U. S. production of wool-apparel fabrics the lowest in 1953 since 1941 and down 9% from 1952, imports of woolens and worsteds increased 426% from 1947 to 1953. The National Association of Wool Manufacturers quoted these figures in opposition to a tariff reduction for low-value wool items.

► A cotton-consumption study made by the U. S. Dept. of Agriculture recently turned up these figures: production of fancy denims increased from 6-million lbs. in 1945 to 73-million in 1953, and production of cotton tufting yarns rose from 12-million lbs. in 1942 to an estimated 93-million lbs. last year. Cotton going into tufted yarn is expected to reach 300,000 to 400,000 bales a year.

► Copies of *Cotton Counts Its Customers*, the statistical yearbook put out by National Cotton Council, can be obtained by writing the council at Box 18, Memphis 1, Tenn.



"Now we come to the most important part of our dyeing course—how to make excuses for bad work."

QUALITY-ENGINEERED
VARIABLE-SPEED CONTROL

FOR EXAMPLE — THE LEWELLEN LUBRICATION SYSTEM—simple, positive, and highly efficient for disc hubs, keys, and shafts. A series of annular grooves are cut in bore of disc hub and connected on alternate sides of key by channels, forming one continuous grease passage. Only a small movement of disc upon the shaft is necessary for complete lubrication. With a minimum amount of attention, sticking or "freezing" is impossible, thus eliminating expensive repairs and replacements.

AND, IN ADDITION— FLEXIBLE LEVER & LINK SUSPENSION . . . thrust bearing load equally distributed on every ball in the bearing, at all speeds and positions, and while changing speeds. DOUBLE-BLOCK, UNITIP BELT keeps tension at a minimum on belt, bearings, and shafts. UNBREAKABLE BELT SPLICE—a distinct feature for uninterrupted operation.

if it's variable-speed control . . . look to

LEWELLEN

TRANSMISSIONS • MOTOR PULLEYS

Open or enclosed, vertical or horizontal Variable-Speed Transmissions in all sizes from fractional h.p. to 60 h.p. . . . Variable-Speed Motor Pulleys in all ratings from fractional to 7½ h.p. Speed range, 3 to 1 for all pulley sizes. (One size—2¾ to 1.)

Service in variable-speed control exclusively for more than 50 years. May we help you?

LEWELLEN MANUFACTURING CO.
COLUMBUS, INDIANA

Be Sure to See This Amazing

NON-BINDING SHEPHERD CASTER

at the SOUTHERN TEXTILE EXPOSITION

TESTED AND PROVED *IN ACTUAL MILL OPERATION!*

- Will Not Bind with waste, thread, yarn, lint
- Free Rolling, free swiveling
- Permanently Lubricated, minimum maintenance
- Two Popular Sizes — 2-3" and 4-5" diameter
- Load Ratings 100 lbs. and 500 lbs. respectively
- Available with or without rubber treads

ON DISPLAY AT

Southern Textile Exposition, Oct. 4-8
Greenville, S. C.
Booth 331 — Textile Hall

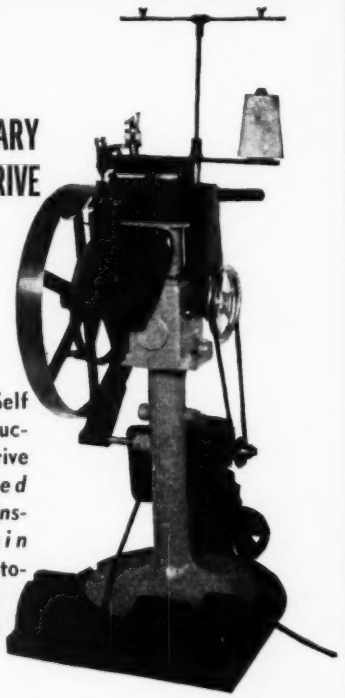
A Patented Product of

WRIGHT-BATCHELDER *Corporation*
10 HIGH STREET, BOSTON 10, MASS.

OR WRITE AT ONCE FOR COMPLETE DETAILS

MODEL 8-D-1

PORTABLE ROTARY WITH MOTOR DRIVE



No exposed gears. Self lubricated gear reduction unit. Chain drive to *Merrow Butted Seaming Head* or *Dinsmore Single Chain Stitch Head*. Automatic cloth stripper. Wide range of stitch requirements.

DINSMORE MANUFACTURING CO.
BOX 267 **SALEM, MASS.**

AT GREENVILLE GET ACQUAINTED WITH

Latest Developments for Textile Testing

1P-2 SERIGRAPH now with

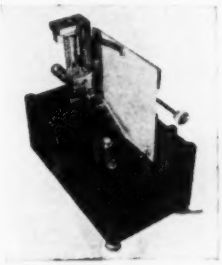
Instant-Return Feature

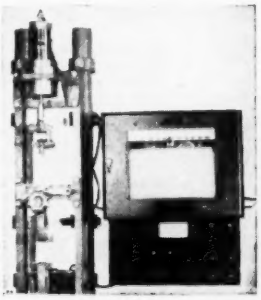
The touch of a lever returns the incline-plane instantly to starting position — or can return at controlled rate for hysteresis test.

SCOTT-CLEMSON

Flat Bundle Fibre Tester

incorporating various improvements which bring greater precision using established techniques.





SCOTT TESTERS "ACCR-O-METER"

Weighing System for Constant-Rate-of-Extension Testing

Advanced electronic equipment for more precise evaluation of textiles, applicable as a kit to existing Scott Testers, Models J and X-3.

BOOTH 401

(We will gladly mail literature upon request)

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Southern Sales Rep:
John Klinck
304 West Forest Avenue
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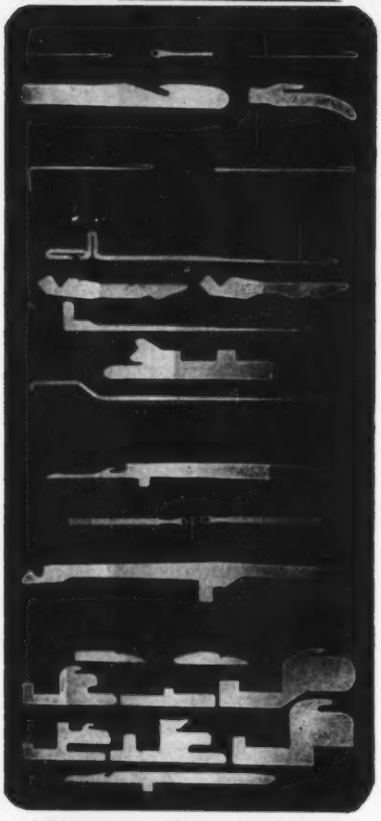
Standard of the World

THE LOYAL T. IVES COMPANY

SPRING BEARD KNITTING NEEDLES



The Ives Company manufactures all known types of Spring Beard needles – for circular, full-fashioned and tricot knitting machines.

Also, Sliders, Sinkers, Jacks, Guides, Sley Points, Looper Points, Transfer Points or Quills, for Spring Beard and Latch Needle knitting machines.

Complete line, all gauges and styles of Needles, Guides, Sinkers and Sley Points for Reiner, Avisco and Whitin Tricot machines. Also equipped for complete casting and squaring service for Tricot machines.

NEW BRUNSWICK NEW JERSEY

End-Use Standards

A project has been set up by the American Standards Assn., under the sponsorship of the National Retail Dry Goods Association, to develop end-use standards for fabrics of all fibers. Over 150 organizations have been invited to send representatives, including all branches of the textile industry.

Textile Calendar

1954

September

Canadian Textile Seminar, Queen's University, Kingston, Ontario, Sept. 9 to 12.

Textile Institute Conference on Fiber Friction, Ghent University, Ghent, Belgium, Sept. 9 to 13.

AATCC, Piedmont Section, annual meeting, Hotel Barringer, Charlotte, N. C., Sept. 10 and 11.

The Fiber Society, fall meeting, in conjunction with Textile Technical Federation of Canada and Canadian Assn. of Textile Colorists, McGill University, Montreal, Canada, Sept. 13 and 14.

AATCC, national convention, Atlanta, Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18.

Combed Yarn Spinners Assn., annual meeting, Grove Park Inn, Ashville, N. C., Sept. 23 and 24.

AATCC, Philadelphia Sect., Penn-Sherwood Hotel, Philadelphia, Pa., Sept. 24.

Textile Operating Executives of Alabama, slashing and weaving, Thach Hall, Alabama Polytechnic Institute, Auburn, Ala., Sept. 25.

International Exhibition of Cotton, Rayon, and Textile-Chemistry Machinery, Busto Arsizio, Varese, Italy, Sept. 25 to Oct. 10.

Industrial Packaging and Materials Handling Exposition, Competition and Short Course, Chicago Coliseum, Chicago, Ill., Sept. 27 to 30 (course), Sept. 28 to 30 (exposition).

October

American Society for Quality Control, Carolinas Sect., School of Textiles, N. C., State College, Raleigh, N. C., Oct. 1.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Oct. 1.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 8.

American Institute of Electrical Engineers, Middle Eastern Dist. meeting, textile session, Abraham Lincoln Hotel, Reading, Pa., Oct. 6.

Chemical Finishing Conference, National Cotton Council, Statler Hotel, Washington, D. C., Oct. 7 and 8.

ASTM, Committee D13, Sheraton Park Hotel, Washington, D. C., Oct. 19 to 22.

N. C. Textile Mfg. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 14 and 15.

AATCC, Piedmont Sect., annual meeting, Hotel Barringer, Charlotte, N. C., Oct. 16.

Lubrication Conference, sponsored by American Society of Mechanical Engineers and American Society of Lubrication Engineers, Lord Baltimore Hotel, Baltimore, Md., Oct. 18 and 19.

National Safety Congress and Exposition, industrial sessions, Conrad Hilton, Congress, Morrison and La Salle hotels, Chicago, Ill., Oct. 18 to 22.

National Assn. of Suggestion Systems, Drake Hotel, Chicago, Ill., Oct. 18 and 19.

American Society for Quality Control, Textile Div. meeting and New England Conference, Ten Eyck Hotel, Albany, N. Y., Oct. 21 to 23.

Textile Operating Executives of Georgia, slashing and weaving, A French Textile School, Georgia Tech, Atlanta, Ga., Oct. 23.

November

Southern Textile Conference, American Institute of Electrical Engineers, Textile Subcommittee, N. C. State College, Raleigh, N. C., Nov. 4 and 5.

Carded Yarn Assn., annual convention, Atlanta, Ga., Nov. 11 and 12.

AATCC, Western New England Sect. Rapp's Restaurant, Shelton, Conn., Nov. 12.

Occupational Vision Workshop, Southern Occupational Vision Council, Georgia Tech, Atlanta, Ga., Nov. 18.

December

National Exposition of Power and Mechanical Engineering, Commercial Museum, Philadelphia, Pa., Dec. 2 to 7.

AATCC, South Central Sect., Hotel Patten, Chattanooga, Tenn., Dec. 4.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 10.

AATCC, Southeastern Sect., Biltmore Hotel, Atlanta, Ga., Dec. 11.

1955

January

International Heating and Ventilating Exposition, Convention Hall, Philadelphia, Pa., Jan. 24 to 28.

American Society for Quality Control, Textile Div., annual meeting, Clemson College School of Textiles, Clemson, S. C., Jan. 27 to 29.

February

Cotton Research Clinic, sponsored by National Cotton Council, Pinehurst, N. C., Feb. 16 to 18.

March

Textile Research Institute, annual meeting, Hotel Commodore, New York City, N. Y., March 10 and 11.

American Cotton Manufacturers Institute, annual meeting, Biltmore Hotel, Palm Beach, Fla., March 31 to April 2.

April

Alabama Cotton Manufacturers Assn., 50th Anniversary meeting, Biloxi, Miss., April 13 to 15.

May

The Fiber Society, spring meeting, School of Textiles, Alabama Polytechnic Institute, Auburn, Ala., May 4 and 5.

June

Southern Textile Association, annual convention, Mayview Manor, Blowing Rock, N. C., June 16 to 18.

Materials Handling Exposition, International Amphitheatre, Chicago, Ill., June 16 to 20.

International Textile Exhibition, Brussels, Belgium, June 25 to July 10.

September

The Fiber Society, fall meeting, Mass. Institute of Technology, Cambridge, Mass., Sept. 8 and 9.

AATCC, national convention, Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 21 to 23.

NOW BOGER and CRAWFORD OFFERS

PLUS 4

HIGH TEMPERATURE DYED YARNS

1. FASTER COLORS
2. MORE COLORS
3. TESTED COLORS
4. FOR ALL TYPES OF YARNS

GUARANTEE

The Quality of Boger & Crawford Yarn is guaranteed — the highest tribute we can pay it!

Signed

Frederick Boger

ORLON . . . NYLON . . . COTTON . . . MERCERIZED . . . YARNS are now dyed by BOGER & CRAWFORD with their new PLUS-4 HIGH TEMPERATURE method! Advantages are many! Faster Colors! A greater range of colors! Tested Colors! For all types of yarns!

Counts: 30/2 to 120/2 inclusive C. P. mercerized as well as 30/1 to 70/1 inclusive Combed Peeler as well as 60/1 to 80/1 and 60/2 to 80/2 spun nylon . . . color fastness equal to or better than Synthetic Fiber Test #1 and #2 AATCC.

Boger & Crawford is also "tops" in bleaching . . . its bleached yarn is *permanent* white, widely used for knitting.

FREE SAMPLES SENT UPON REQUEST. WRITE US TODAY. You will quickly see the advantages of PLUS-4 High Temperature Dyed Yarns.

BOGER and CRAWFORD

"K" and E. VENANGO STS., PHILADELPHIA 34, PA., U.S.A.

SPINNING PLANT— BOGER CITY, N. C.

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THE SOUTH'S LARGEST MAKERS OF GEARS AND CHAIN DRIVES

It's News*
From
PRECISION GEAR

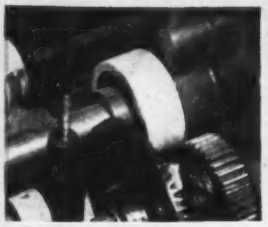
★NEWS FOR VOLUME!

CARDING

CARD CHAIN OILER: Chain links pump the plunger, forcing correct amount of oil out the tube and wick. Oils the flats in 2-3 hours, causing easier setting, reducing hanging or cocking. Install on each card, or switch over in 2 minutes.

ROVING

LIFT SHAFT BEARING is one of 10 PRECISION Engineered ball bearing applications, to get better-than-new Roving Frame results. Install by units, or complete —to stop drag, lubricating and noise, to reduce power and maintenance. Cast iron bearings are costly.

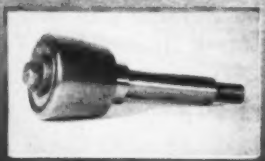


SPINNING

JACK STUD BEARING: is part of PRECISION'S Spinning and Twister frame modernization. It replaces the noisy, plain bearing jack stud, giving many times the life. Moderate cost. Can install with minimum stoppage.

WEAVING

PICK BALL BEARING banishes oiling and continual adjusting of pick motion. Reduces wear on pick cam and shaft. Results are: better quality, less seconds. And with hardened alloy cams, breaking of cam points and pressing of cams are stopped.



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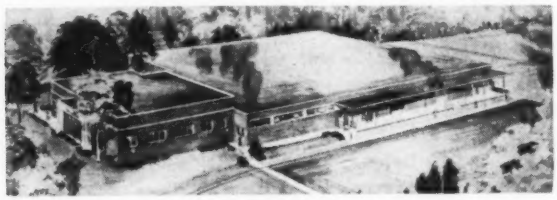
PRECISION

ENGINEERED TESTED

CHARLOTTE, N. C.

NEWS ABOUT Suppliers

ALLIS-CHALMERS MFG. CO., Milwaukee, Wis.—Thomas C. Knudsen named assistant to general manager, mechanical product development laboratory; Vernon B. Honsinger appointed assistant to general manager in charge of electrical product development laboratory; Dwight H. Lory made manager of the Texrope Drive Section, all at the Norwood works. . . . . **AMERICAN CYANAMID CO.**, Dyestuff Dept., New York, N. Y.—Edwin I. Stearns named assistant manager of Midwestern territory; Paul C. Lindley, Jr., named sales representative in North Carolina. . . . . **AMERICAN RESINOUS CHEMICALS CORP.**, Peabody, Mass.—Robert E. Munsell named technical representative in New England. . . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Harry D. Abbott appointed manager of sales research for Sylvania Div.; Francis E. Price transferred to rayon-staple sales in Charlotte, N. C. . . . . **BARBER-COLMAN CO.**, Rockford, Ill.—Automatic Control and Uni-Flo Div. opened new branch office in Birmingham, Ala. . . . . **BULLARD CLARK CO.**, Danielson, Conn.—John W. Hollingsworth named service engineer for E. H. Jacobs Northern Div. and E. H. Jacobs Southern Div. . . . . **CHEMSTRAND CORP.**, Decatur, Ala.—Ernest J. Gilliland appointed to the technical sales staff. . . . . **CLARK EQUIPMENT CO.**, Battle Creek, Mich.—Highway Machinery & Supply Co., Richmond, Va., appointed agent in Virginia for Industrial Truck Div. . . . . **DRAPER CORP.**, Hopedale, Mass.—Purchased property and business of Jacquard Knitting Machine Co., Inc., Philadelphia, Pa. . . . . **W. F. FANCOURT**, Philadelphia,



DRAPER CORP., Hopedale, Mass., expects to have this new office and warehouse in Atlanta, Ga., completed this fall.

Pa.—Jeffrey W. Young named assistant sales manager in Southern territory; Robert P. Rhodes named supervisor of Middle Atlantic Sales. . . . . **FIDELITY MACHINE CO.**, Philadelphia, Pa.—Appointed exclusive American distributor for the insulating-taping machines made by Pourtier Pere et Fils, Romaineville-Seine, France. . . . . **FOSTER MACHINE CO.**, Westfield, Mass.—Completed new experimental winding room equipped to do experimental winding on all widely used Foster models. . . . . **ROBERT GAIR CO., INC.**, New York, N. Y.—Frank J. Sullivan named division manager of Ohio Corrugated Box Div., Cleveland, O. . . . . **GARDNER-DENVER CO.**, Quincy, Ill.—Charles M. George named assistant to the president; J. W. Gardner appointed administrative assistant; B. P. Spann elected vice president; George W. Gutekunst, named general sales manager. . . . . **GEIGY CHEMICAL CORP.**, New York, N. Y.—Mark Weisberg retired as head of the Alrose Chemical Co. Div., Cranston, R. I. . . . . **GENERAL ELECTRIC CO.**, Pittsfield, Mass.—Robert L. Gibson named general manager of newly formed Chemical and Metallurgical Div. . . . . **GENERAL MOTORS CORP.**, Harrison, N. J.—Carl W. Kalchthaler named chief engineer of Hyatt Bearings Div.; H. Ralston Gib-

News About **SUPPLIERS** (Continued)

bons named technical assistant to the general manager. . . . . **GOODYEAR TIRE & RUBBER CO.**, Akron, Ohio—Edward C. Brown, Jr., James F. Carraher, and Earl Scott named to the sales-service division of the Chemical Div. . . . . **GRATON & KNIGHT CO.**, Worcester, Mass.—Opened new branch office at 16,146 Wyoming St., Detroit, Mich. . . . . **HILTON-DAVIS CHEMICAL CO.**, Division Sterling Drug, Inc., Cincinnati, Ohio—Opened new service laboratory and distribution center in Greenville, S. C.; S. Y. Stribling, III, is manager; will erect

WILFRED O. LANGILLE (left) was elected president of Diehl Mfg. Co., Finderne, N. J. ROBERT S. GRIFFITH (center) has retired as secretary of Royce Chemical Co., Carlton Hill, N. J. A. E. CLEGHORN (right) has been named executive vice president, National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y.

a new plant for the manufacture of textile dyestuffs with Amritlal & Co. Ltd., Bombay, India, in Bombay; has moved Customers' Service Laboratories and textile distribution center to Providence, R. I. . . . . **IMPERIAL CHEMICAL INDUSTRIES OF CANADA LTD.**, Montreal, Que.—Constructing a new plant at Millhaven, Ont., to produce Terylene polyester fiber. . . . . **MINNESOTA MINING & MFG CO.**, St. Paul, Minn.—William H. Swan named industrial trade tape sales manager in Buffalo, N. Y., division. . . . . **NATIONAL ANILINE DIV., ALLIED CHEMICAL & DYE CORP.**, New York, N. Y.—Operations will begin this fall in new nylon plant at Bermuda Hundred, Va. . . . . **NATIONAL STARCH PRODUCTS, INC.**, New York, N. Y.—Robert De Wolfe named supervisor of New York sales. . . . . **NOPCO CHEMICAL CO.**, Harrison, N. J.—Constructing an addition at its subsidiary Yocum Faust Ltd., London, Ont. . . . . **OAKITE PRODUCTS, INC.**, New York, N. Y.—Charles F. Williams, Jr., James F. Driesch, and T. V. Hause named technical sales representatives. . . . . **OLIN INDUSTRIES, INC.**, East Alton, Ill. and **MATHIESON CHEMICAL CORP.**, New York, N. Y.—have merged and will be known as Olin Mathieson Chemical Corp. . . . . **ORR & SEMBOWER, INC.**, Reading, Pa.—Edgar A. Burt appointed chief engineer. . . . . **PERMUTIT CO.**, New York, N. Y.—Robert Fay O'Connell named sales engineer in St. Louis, Mo., office of Industrial Sales Dept. . . . . **PITTSBURGH PLATE GLASS CO.**, Pittsburgh, Pa.—Peter J. Baier,

ALLAN P. LUCT (left) has been appointed treasurer of Industrial Rayon Corp., Cleveland, Ohio. FORREST C. AMES (center) has joined Wiesner-Rapp Co., Buffalo, N. Y., in a sales-engineering capacity. ERWIN G. WALKER (right) has been named sales manager of the Dyestuff Dept., American Cyanamid Co., Bound Brook, N. J.

HOW TO EFFICIENTLY CHELATE IRON THROUGHOUT pH RANGE...

THE Versenes®

VERSENE REGULAR
pH 2.0—7.0
REASON FOR USE: most stable chelate, most economical.
COMMENTS: best chelating agent for iron in acid solutions. Also chelates other polyvalent metals throughout pH range.

VERSENE REGULAR
(original EDTA) — An excellent Chelating (complexing) Agent for iron in *acid* pH range. Loses effectiveness for iron as pH increases above 7. Also chelates other polyvalent metals throughout pH range.

VERSENE Fe-3 SPECIFIC
pH 7.0—12.5
REASON FOR USE: very stable chelate, most economical.
COMMENTS: do not use with strong oxidants.

VERSENE Fe-3 SPECIFIC
Efficiently chelates iron in pH range from 7 to 12.5. Quantity of Versene Fe-3 Specific must be increased to keep a given amount of iron in solution as pH increases.

VERSEN-OL®
pH 3.0—12.5
REASON FOR USE: first chelates iron, then, until exhausted, deactivates other polyvalent metals.
COMMENTS: do not use with strong oxidants.

VERSEN-OL®
(N-hydroxyethylethylene diamine triacetic acid tri sodium salt.) Similar to Versene Fe-3 in effect. Differs by first inactivating any iron ions present before going on to Ca, Mg and other polyvalent metal ions. Reacts with all polyvalent metals on a mole-to-mole ratio. At high pH's, it loses some efficiency for iron, and more is required.

VERSENE Fe-3
pH 2.0—12.5
REASON FOR USE: chelates limited quantities of iron plus large amounts of other metal ions if present.
COMMENTS: ratio of iron in alkaline solution must not be excessive to the Versene Fe-3 used. Strong oxidants may reduce effectiveness of this component.

VERSENE Fe-3
(A physical blend of Versene Regular and Versene Fe-3 Specific.) Combines effect of both compounds but each works independently. The Versene Regular component acts only toward polyvalent metal ions other than iron but the Versene Fe-3 Specific component specifically chelates the iron in alkaline solutions.

VERSENE-T
pH 12.5 to high conc. of Caustic
REASON FOR USE: prevents precipitation of iron or dissolves iron rust in caustic solutions.
COMMENTS: do not use with strong oxidants.

VERSENE-T
Most efficient iron Chelating Agent known for use in caustic solutions. Will not function *unless* free caustic is present. Also chelates other metals including Ca, Mg, Cu, Ni, Co, etc.

NOTE: Iron Chelating Agents containing hydroxyl groups may be oxidized by peroxide, chlorine, hypochlorite, etc. which destroys the ethanolic groups. Hence, only Versene Regular is recommended when complete stability is required in presence of strong oxidants.

Ask for Technical Bulletin #2. Competent Counsel available for those who want maximum chelating efficiency at minimum cost.

"Chemistry's most precise chemicals"

VERSENES INCORPORATED
(FORMERLY BERSWORTH CHEMICAL CO.)
FRAMINGHAM, MASSACHUSETTS

KEY TO CHELATION

BARNES SERVICE

MANAGEMENT CONSULTANTS TO THE TEXTILE INDUSTRY FOR OVER ⅓ CENTURY

Current conditions make it imperative that all elements of cost be carefully controlled. The Barnes cost controls are:

labormeter **LM**
burdenmeter **BM**
wastemeter **WM**

LM is a method of labor measurement developed as a means of exercising complete control of manufacturing labor costs. Gains and losses that result from efficiency deviations are separated from those created by variations in either the manhours or number of personnel required by actual operations.

BM is a measurement of overhead that provides an effective means for controlling actual expenditures. Gains or losses of "fixed overhead" resulting from other than normal activity are segregated from under or over expenditure variances. The charges for "variable overhead" are compared with budgeted amounts adjusted to actual operations.

WM is a method by which all types of actual waste are measured by predetermined standards. Each week the waste made by type and process is compared to a calculated standard pounds and the gains or losses evaluated in dollars.

We will be pleased to give additional information about these services or any of the following:

• New Plant Developments • New Methods • Reorganizations • Plant Appraisals • Long Range Modernization Programs • Mechanical and Operating Surveys • Job Analysis and Evaluation • Work Loads • Methods Time Measurement • Incentive Plans • Accelerated Training Programs • Manhour Productivity Index • Product Costs • Cost Control Methods • Production Planning • Inventory Controls • Executive Personnel Service

Our experience embraces Cotton, Wool and Synthetics, Yarn and Fabric Manufacturing, Finishing, Dyeing, Printing and Sewing Plants.

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News About **SUPPLIERS** (Continued)

Jr., joined sales staff of glass-fiber division, Chicago, Ill. . . . . **RELIANCE ELECTRIC & ENGINEERING CO.**, Cleveland, Ohio—Merlyn E. Schlenker named to sales-engineering staff, Chicago, Ill. . . . . **ROBERTS CO.**, Sanford, N. C.—Has received an order for more than 260,000 spinning spindles; George C. Cater named field service engineer in Anderson, S. C. . . . . **SQUARE D CO.**, Detroit, Mich.—Will construct a heavy-equipment manufacturing plant and regional sales office in Royal Oak. . . . . **A. E. STALEY MFG. CO.**, Decatur, Ill.—Paul Breyfogle appointed technical assistant in industrial sales; Byron Fast named sales-service engineer; Robert C. Hanna promoted to industrial sales representative, Dallas, Tex. . . . . **STAUFFER CHEMICAL CO.**, New York, N. Y.—Harold J. Klee named manager of newly organized Central Sales Div., Chicago, Ill., and Houston, Tex.; Alfred N. Wohlwend has joined technical sales staff, New York, N. Y. . . . . **THERMOMAT CO.**, Trenton, N. J.—Robert Heath named representative in Chicago, Ill.; Ned L. Roberts named representative in Sherman Oaks, Calif. . . . . **UNION CARBIDE & CARBON CORP.**, New York, N. Y.—V. H. Boden and D. B. Mullin appointed assistant sales managers in Industrial Chemical Sales Dept.; Dr. August B. Kinzel named director of research. . . . . **U S BOBBIN & SHUTTLE CO.**, Lawrence, Mass.—R. L. Carroll named sales engineer in Greenville, S. C. . . . . **UNITED STATES TESTING CO.**, Hoboken, N. J.—George B. Acton appointed Southeastern representative, Laurens, S. C. . . . . **WARNER & SWASEY CO.**, Cleveland, Ohio—Lester M. Cole named general sales manager. . . . . **WARNER ELECTRIC BRAKE & CLUTCH CO.**, Beloit, Wis.—R. F. Edgar named head of new regional offices Chicago, Ill. . . . . **WARWICK CHEMICAL CO.**, Long Island City, N. Y.—Alfred N. Henschel appointed technical service representative. . . . . **WESTVACO CHLOR-ALKALI DIV., FOOD MACHINERY & CHEMICAL CORP.**, New York, N. Y.—Constructing an anhydrous ammonia unit at its South Charleston W. Va., plant. . . . . **WYANDOTTE CHEMICAL CORP.**, Michigan Alkali Div., Wyandotte, Mich.—F. Estes Smith appointed assistant to the president; George W. Schwarz named vice president; James G. Minahan appointed resident salesman, New York, N. Y.

NEWS ABOUT *Mills*

COTTON MILLS

Beacon Hill Rug Co., Fletcher, N. C., has begun production at its new cotton-carpet mill.

Callaway Mills Co., LaGrange, Ga., has let a contract for the construction of a one-story, 31,700-sq.-ft. warehouse addition to its Valway Mill to Newman Construction Co., LaGrange. Samuel M. Turner, LaGrange, is the architect.

Cone Mills, Inc., Greensboro, N. C., has purchased an additional 200 acres of land on the outskirts of San Marcos, Tex., for a proposed new denim mill.

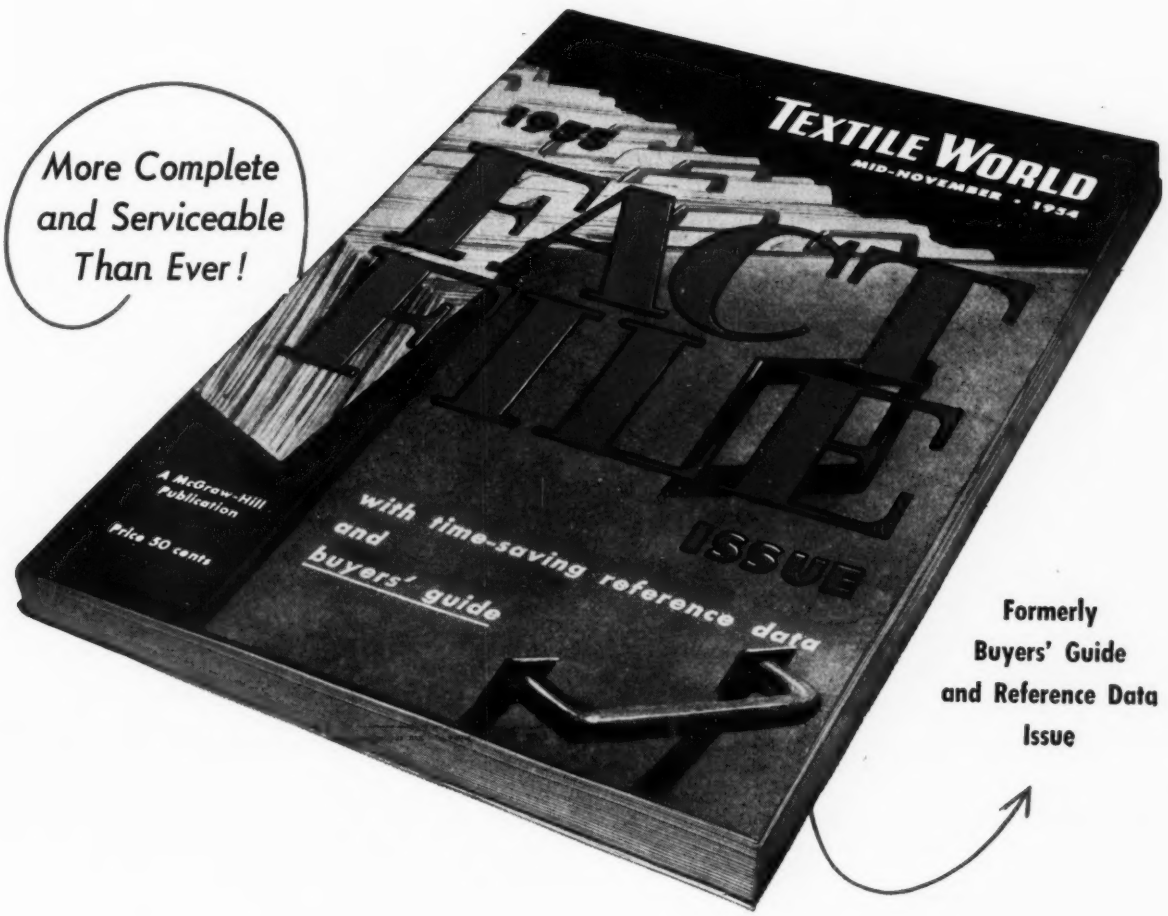
Forrest Mills, Inc., Calhoun, Ga., is planning to build a one-story addition that will contain about 12,000 sq. ft. of floor space. This mill recently began production of tufted broadloom carpeting.

Heflin, Ala.—John E. Gaither, Heflin, Ala., has been awarded the contract for the construction of a chenille plant by the City of Heflin. The cost will be $151,000.

Linn Mills Co., Concord, N. C., has finished a three-

A COVER TO REMEMBER!

TEXTILE WORLD'S Mid-November Issue . . .



TEXTILE WORLD is at work on the new FACT FILE issue to be sent to all subscribers in mid-November of this year. Known to you last year as the Buyers' Guide and Reference Data Issue, the newly designed, improved, and handier FACT FILE issue will be easily distinguishable from regular issues of TEXTILE WORLD.

Between the new covers, you will find an accurate and complete Buyers' Guide of product listings and a Reference Data section of short-cut tables and other units of useful technical and engineering data.

Remember the name—FACT FILE issue—coming your way in mid-November!

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News About MILLS (Continued)

story brick addition that contains 43,000 sq. ft. Plans call for the eventual addition of about 7,000 new spindles for combed yarn.

Lorraine Yarn Mills, Inc., Philadelphia, Pa., has leased additional space at its new location at 426 E. Allegheny Ave.

Lucedale, Miss. — Contract has been let to Wood Fabricators, Inc., Quitman, Miss., by the George County Board of Supervisors, Lucedale, for a one-story building that will be occupied as a branch mill by Russell Mfg. Co., Alexander City, Ala. Cost is estimated at $200,000.

Macanal Textile Corp., New York, N. Y., has merged with Hamer Spinning Mills, Hamer, S. C., Morowebb Cotton Mills, Dallas N. C., and Macanal Mills, Salisbury, N. C. These plants will operate as divisions of Macanal.

F. W. Poe Mfg. Co., Greenville, S. C., has awarded the contract at $528,000 to McKay-Helgerson Co., Greenville, for the construction of a 195,000-sq. ft. cotton terminal warehouse. Work has been started.

Springs Cotton Mills, Lancaster, S. C., has a $2,200,000 construction program under way. Included are a 40,000-sq.-ft. cotton warehouse and a 40,000-sq.-ft. addition to the weave room at its Lancaster Plant; a 77,000-sq.-ft. warehouse and a 120,000-sq.-ft. finished-goods warehouse at Grace Bleachery. About $600,000 worth of looms will be installed at Lancaster.

Steele Plant of Burlington Mills, Cordova, N. C., is installing spindles that were acquired from Pee Dee Mfg. Co. Increased office space is also being provided at Cordova.

Woodside Mills, Greenville, S. C., expects to complete a $500,000 improvement program at its Liberty, S. C., plants soon and to have new equipment in operation by Oct. 15.

WOOLEN AND WORSTED MILLS

Hargo Woolen Mills, Inc., New Bedford, Mass., has purchased the Charlestown Woolen Co., Keene, N. H. C. Harold Erskine, Hargo president, plans to start full scale operation of this mill soon.

Starkville, Miss.—The municipality closed bids recently for a new one-story building that will be occupied by Lockport Felt Co., Newfane, N. Y., under a long-term lease. Johnston & Jones, Starkville, is the architect.

SYNTHETICS MILLS

Verney Corp. will transfer machinery and equipment from its Manchester, N. H., weaving mill to Richmond Hill, Ga.

KNITTING MILLS

Claussner Hosiery Co., Paducah, Ky., has placed its fourth 75-gauge 32-section Lieberknecht full-fashioned knitting machine in operation using 10-den. nylon.

J. T. Flagg Knitting Co., Florence, Ala., is constructing a finished-goods warehouse.

Glen Raven Knitting Mills, Inc., Glen Raven, N. C., is now in full operation with eight Reiner machines running nylon and Dacron.

Gold Mills, Pine Grove, Pa., has purchased 15 tricot machines and related equipment from Jane Dale Hosiery Co., which operated in the Pennwood Mills, Blackwood, N. J.

Hunter Hosiery Co., Laconia, N. H., is building a 10,000-sq.-ft. mill in the Lakeport section. About 58 new knitting machines have been ordered.

Independence, La. — The Board of Aldermen is having

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The GRIFFIN SIZE MACHINE is the first machine ever built for controlled sizing . . . it originates the first basic improvements in size machines in 75 years and all improvements are covered by patents pending.

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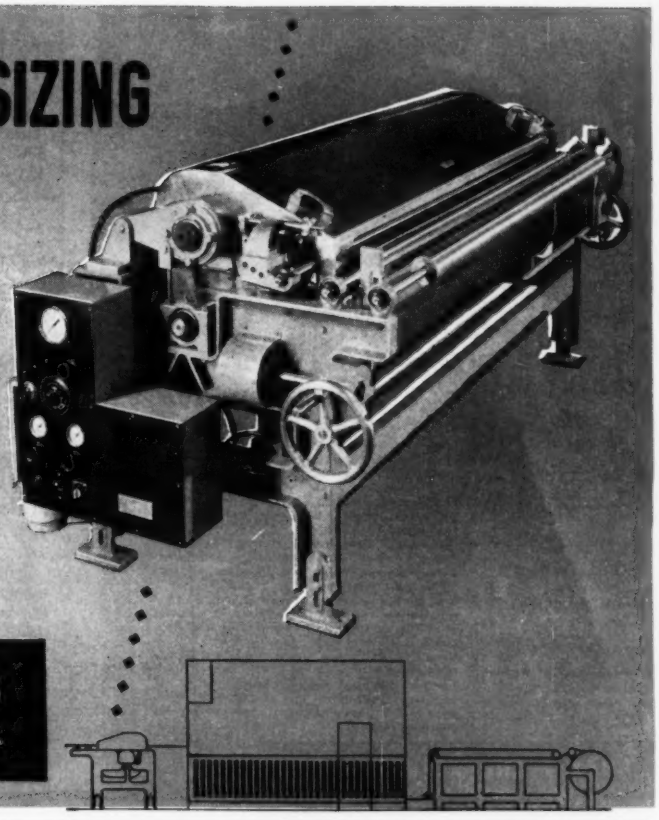
For increased loom efficiency get the facts on the GRIFFIN SIZE MACHINE at the Southern Textile Exposition. Write for our folder on the operation and specifications of this remarkable new machine.



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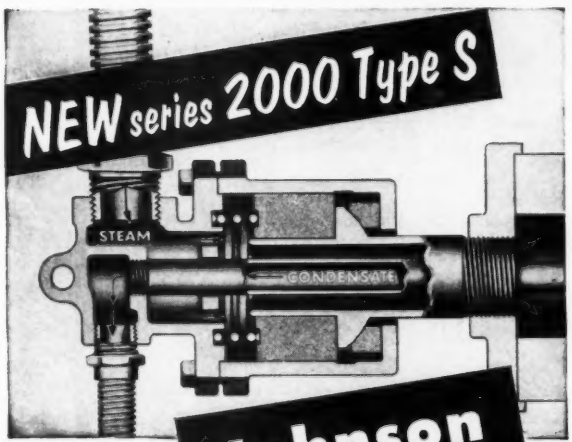

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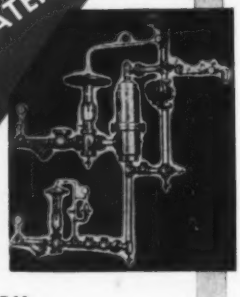

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News About MILLS (Continued)

revised plans prepared for a one-story building about 62x 190 ft., to be occupied by Alden Mills, New Orleans, La. Robert Sherman, Hammond, La., is the architect.

Jacobs Hosiery Co., Charleston, S. C., will soon move into its new brick building at 333 E. Bay St.

Knitmode Mills, Inc., Newton, N. C., has been incorporated with an authorized capital of $100,000. Principals are Mrs. Ruth B. Lambert and O. E. Starnes Jr., both of Asheville, N. C., and Mrs. Frances H. Mallonee, of Candler, N. C.

Moers Mills, Inc., Watertown, Tenn., will open a hosiery plant in the former Sunshine Hosiery Mills building, South Church St., Murfreesboro, Tenn.

Munsingwear, Inc., Minneapolis, Minn., has let the contract to Lippert Bros. Construction Co., Vinita, Okla., for a new one-story branch mill at Vinita. The new mill will measure 150x245 ft. The cost will be about $325,000.

National Tricot Co., Hawthorne, N. J., has moved into new and larger quarters at 111 Industrial Road East, Allwood-Clifton, N. J.

Pasold's (Canada) Ltd., Dorion, Que., has invested approximately $500,000 in the new Ladybird Knitting Mills. Wood & Langdon of Montreal is the architect and J. L. E. Price & Co., also of Montreal, is the contractor.

Penman's Ltd., Paris, Ont., will move its corporate head office from Montreal, Que., to Paris, where its executive office is maintained.

Shelley Knitting Mills, Philadelphia, Pa., which recently began business, has leased an additional 3,000 sq. ft. at 2222 N. 9th St., Philadelphia. An additional knitting machine is being installed.

DYEING AND FINISHING PLANTS

Canada-Pittsburgh Industries Ltd., Toronto, Ont., has purchased the total assets of Guaranty Silk Dyeing & Finishing Co. Ltd., St. Catherines.

Pioneer Finishing Corp., Fall River, Mass., is expected to employ about 100 persons when full production is reached. The plant will specialize in finishing cottons, rayons, nylon mesh, synthetics, water-repellent and crease-resistant finishes embossing, and glazing. Ralph V. Carlson is president; Clayton H. Carlson, vice president in charge of production; Edward Ricci, treasurer; and Leo Goldberg, executive vice president.

Union Bleachery, Greenville, S. C., expects to complete its 20-acre, 70,000,000-gal. reservoir soon.

MISCELLANEOUS MILLS

Anderson Narrow Fabrics, Inc., Anderson, S. C., has obtained a charter to buy, sell, process and manufacture textile products and materials. Authorized capital stock is $50,000. Edgar A. Ross is president.

Dept. of Education, Commonwealth of Massachusetts, Boston, Mass., has received a low bid from L. & R. Construction Co., Inc., Medford, Mass., at $824,333, for a new addition to the New Bedford Institute of Textiles, New Bedford, Mass.

Esther Lace Works, Inc., Coventry, R. I., has been chartered with Horace L. Greene, Esther Greene, and James G. Richard, Coventry, as incorporators. The company will manufacture and sell lace.

Hilltop Lace Works, Inc., Coventry, R. I. was chartered recently by Philip S. Bestwick, Saunderstown; Frederick K. Bestwick, Philip H. Bestwick, and Olive N. Dzialo, Coventry, R. I.

Hodges Fiber Mill, Holyoke, Mass., will transfer its equipment and operations to space in the Patchogue-Plymouth Mill, Lawrence, Mass.

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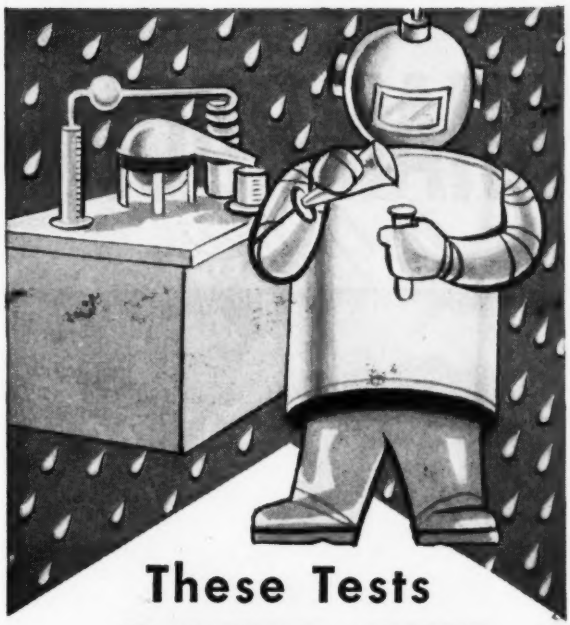

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NEWS ABOUT Men

Stanley Ashe has been named vice president of Shelley Knitting Mills, Philadelphia, Pa. He succeeds **Grace Weinstein**, resigned.

Bernard Berry has been named overseer of dyeing at Charlottesville Woolen Mills, Charlottesville, Va.

Joseph J. Bird has been appointed executive vice president of Standard Hosiery Mills, Inc., Burlington, N. C.

Charles Bittman will retire as treasurer of Cone Mills Corp., Greensboro, N. C., next January 1.

Henry F. Brabham has been appointed superintendent of Alma Mills, Gaffney, S. C.

A. S. Bruneau has been elected a vice president of Canadian Cottons Ltd., Montreal, Que.

Bernard Bulger has been promoted to overseer of dyeing and finishing at the Orr Felt & Blanket Co., Piqua, Ohio.

William H. Burroughs has been elected assistant treasurer of Textron, Inc., Anderson, S. C.

F. M. Clark has been named resident manager of the Kennebec Mills of American Woolen Co., Fairfield, Me.

L. S. Cockburn has been named resident manager of the Anderson Mills, a unit of American Woolen Co., Showhegan, Me.

Richard Comer has been elected to the board of Avondale Mills, Sylacauga, Ala., succeeding his father, the late **B. B. Comer. A. D. McMillan** has been named secretary to succeed **A. F. Mullins, Jr.**, retired.

William A. Corry has joined the research staff of the Landers Corp., Toledo, Ohio.

E. I. Damon has been named manager of Yantic Woolen Mills, Inc., Yantic, Conn.

Henry Gerrits has resigned as resident manager of the Norwich Mills of American Woolen Co., Norwich, Conn. He has been succeeded by **L. E. Parkhurst.**

G. W. Grier has been named president of Penmans Ltd., Paris, Ont. He succeeds **Archibald F. Baillie**, resigned.

Arthur J. Grossman has been named vice president of both C. W. Anderson Hosiery Co. and Dapper Hosiery Mills, Inc.,

ANDRE BLUMENTHAL (left) has been elected chairman of the board and a treasurer of Sidney Blumenthal & Co., Inc., New York, N. Y. MALCOLM G. JONES (right) has been elected president and a director of the company.

TEXTILE WORLD

Reprints Available

▶ Reprints of the following articles run in past issues of TEXTILE WORLD are available at the price indicated. To order, write or use the coupon below, stating the titles of the reprints desired. Enclose check or money order payable to TEXTILE WORLD.

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A series of articles of interest to those engaged in practical fabric design or in teaching functional design. One article introduces the all-fiber system, which takes the guess out of how many ends and picks to use in changing to a new fabric. Another shows how to change weight without changing structure. Detailed numerical examples are provided. A discussion of yarn diameters, as the basis of structure, opens the series.

SYNTHETIC-FIBER TABLE — **50¢ each, 40¢ in lots of 20 or more**
The latest (1953) edition lists by type and name all U. S. yarns and staple fibers in commercial production. A list of suppliers by type and form of fiber is also included. Valuable related data and a "Terminology and References" section are included. Comparative properties of wool and cotton fibers are included. An explanation of glass-fiber nomenclature and its yarn-numbering system makes conversion to cotton counts easy.

WOOL-SYSTEMS FLOW CHART — **35¢ each, 25¢ in lots of 20 or more**
New (1953) edition shows all the processes in making woolen and worsted fabrics on all yarn systems. Six typical finishing routines are also pictured to cover the main fabric types. The chart includes the manufacture of synthetic and blended fabrics on wool systems.

COTTON FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
An illustrated step-by-step process chart of cotton manufacturing from bale to finished fabric. Both principal and alternate flows are shown.

CONTINUOUS-FILAMENT FLOW CART — **25¢ each, 15¢ in lots of 20 or more**
Principal and alternate step-by-step process in handling continuous-filament yarns from the case of yarn to the finished fabric (including tire cord) are shown.

KNITTING FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half-hose, and knitted underwear and outerwear (circular and warp)—are shown and illustrated.

FELT FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
Manufacture of roll felts, sheet felts, and felt wheels is shown in step-by-step order.

COTTON-FIBER TABLE — **25¢ each, 15¢ in lots of 20 or more**
Revised (1953) edition shows fiber properties and manufacturing performance of the 11 varieties of cotton that make up more than 80% of the U. S. cotton grown. Data given enable mills to save money by selecting the best fiber for the end product.

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SHRINKAGE TABLES — **25¢ each, 15¢ in lots of 20 or more**
These tables permit quick determination of ½ to 25% shrinkage, covering pieces from 50 to 100 yds.

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Control MAXIMUM PRODUCTION with G. S. HAND TACHOMETERS and SPEED INDICATORS

1% Accuracy for any range from 30 to 100,000 RPM or surface speed.

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JIFFY TEXTILE MARKER

For use on rayon, cotton and woolen material.

Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.

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JIFFY TEXTILE MARKER CO.

406 W. School Lane
Philadelphia 44, Pa.

News About MEN

(Continued)

both located in Clinton, S. C.

Charles F. Hicks has been named manager and assistant treasurer of Nebel Knitting Co., Charlotte, N. C.

Charles L. Hildreth has been elected a director of Bates Mfg. Co., Lewiston, Me., succeeding the late **William S. Newell.**

Rudolph M. Hirschwald has been elected president of Sanson Hosiery Mills, Inc., Allentown, Pa. He succeeds **Stanton D. Sanson,** retired.

Robert L. Huffines, Jr., has been elected chairman of the board and president of Robbins Mills, New York, N. Y. **Burke McConnell** has been elected executive vice president and a member of the board. **William D. Mewhort** has been elected a vice president; and **Robert Holding, Erwin N. Darrin,** and **R. M. Cushman** have been elected to the board.

Leonard F. Kelly has been appointed to the newly created position of assistant to the president of the Homestead Woolen Mill, W. Swanzey, N. H., and Dartmouth Woolen Mills, Claremont, N. H.

F. Leo Kenny has been named superintendent of the Uxbridge plant of Bachmann Uxbridge Worsted Corp., Uxbridge, Mass. He succeeds **Albert Otto,** resigned.

John E. Lee, Jr., has been named comptroller at Callaway Mills Co., LaGrange, Ga.

Walter N. Lefler has been appointed general overseer of carding and spinning at Republic Cotton Mills, Plant No. 1, Great Falls, S. C.

Handley H. Lewis has been appointed assistant superintendent of finishing at the Valway Plant of Callaway Mills Co., LaGrange, Ga.

Caleb Loring, Jr., has been elected a director of Plymouth Cordage Co., Plymouth, Mass.

Thomas E. Lucas has been appointed general manager of all operations for Associated Textiles of Canada Ltd., Louisville, Que. He succeeds **Oscar Marc-Aurele,** resigned.

Phil Midgley has been named overseer of spinning at M. T. Stevens & Sons, North Andover, Mass.

Woodrow Miller has been named overseer of dressing at the Puritan Mills of American Woolen Co., Plymouth, Mass.

Clyde T. Moore has been named plant manager of the Robbins Mills, Inc., finishing plant, Clarksville, Va.

Alfred E. Otto has been elected vice president and general manager in charge of manufacturing and a member of the board of Botany Mills, Inc., Passaic, N. J. He succeeds **Harold Templeton,** resigned.

Lewis R. Parker has been elected president of Albany Felt Co., Albany, N. Y. He succeeds **Frederick McDonald,** who has been named vice chairman of the board.

Robert W. Pinault has joined the editorial staff of TEXTILE WORLD as assistant editor specializing in bleaching, dyeing, and finishing. He was formerly with Riegel Textile Corp., Ware Shoals, S. C.

Roland H. Reilly has been named superintendent of the Springfield, Mass., **plant of** William Carter Co., succeeding **Thomas J. Martin. John E. Harrington** has been named assistant superintendent.

Frank T. Roberts has been named director of manufacturing at Robbins Mills, Inc., Aberdeen, N. C.

Brady Rogers has been named superintendent of Mill No. 3, Cowikee Mills, Eufaula, Ala.

Howard Rollins has joined Dover Mill Co., Shelby, N. C., as general superintendent, succeeding **Harold Haroldson,** who has been named general manager of Haynsworth Mill, Anderson, S. C.

A. S. Russell has been appointed general manager of Monarch Knitting Co. Ltd., Toronto, Ont.

H. J. Sartrys has been named overseer of weaving at Wm. H. Prendergast, Bridgeton, R. I.

Robert Servin has been elected president of Robert Hosiery Mills, Inc., Collegeville, Pa.

IF THIS IS YOUR PROBLEM

If you need effective, highly readable, smartly illustrated company literature (booklets, pamphlets, manuals) to display your products, inform the public of your operations, attract key personnel to your plant, train employees, and perform any of the other communicative functions that are vital to your business . . .

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SOLID STEEL COLLARS

now size-marked for easy identification

Your HALLOWELL distributor now stocks these *size-marked* precision machined solid steel collars in sizes to fit shafts from 3/16" to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL CO., Jenkintown 35, Pa.

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SPS
JENKINTOWN PENNSYLVANIA

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SPECIALIZING IN TEXTILES For OVER ONE-THIRD OF A CENTURY

COST SYSTEMS
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SPECIAL REPORTS
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COST REDUCTION REPORTS

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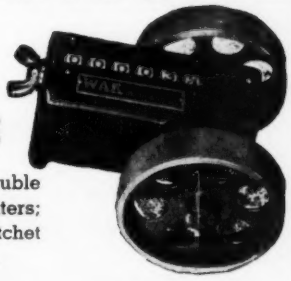
YOU CAN COUNT ON WAK COUNTERS

- RUGGED
- ACCURATE
- DEPENDABLE



We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

WAK INDUSTRIES — WRITE PHONE WIRE — CHARLOTTE, N. C.

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It will help us keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

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Please change the address of my Textile World subscription.

Name .....
Old Address .....
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New Company Connection .....
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MILTON
NYLON & RUBBER YARN
BEAMS

MILTON aluminum alloy Tricot and Section Beams feature CONTINUOUS WELDED CONSTRUCTION

Drop-forged, heat-treated aluminum alloy heads and extra heavy barrels withstand pressures of nylon and rubber warps.

WRITE FOR FREE BULLETINS
No. 54-S (Steel Beams) No. 49-A (Light Metal Beams)

MILTON MACHINE WORKS, INC.
MILTON • PENNA.

M·B "AMOSKEAG" PNEUMATIC ROLL PICKER

MODEL A-VT-A
20,000 R.P.M.

This is NOT a grinder, but the original pneumatic tool especially designed for the SPECIFIC Purpose of

REMOVING LINT and FLY

from the top rolls and other parts of the drafting elements on

SPINNING FRAMES also ROVING FRAMES

Spindle design permits using PICK (which gathers the fly and lint). 3/16" diameter by 5" long when used on Spinning Frames and 3/16" diameter by 7" long when used on Roving Frames. Exhaust air directed back of roll picker to prevent fly and lint from being blown into yarn when spinning by air deflector. Special grease-sealed bearings. No lubrication required. Weight only 14 oz.

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Virginia and South Carolina
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CHARLOTTE SUPPLY CO.....Charlotte 1, No. Car.
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46 Victor Ave.
DETROIT 3, MICHIGAN

AT THE SHOW
AN INVITATION

A quiet comfortable booth (#205) is yours for rest or business, complete with telephone and comfortable chairs. Hope we'll have the pleasure of seeing you there.

J. E. SIRRINE COMPANY ENGINEERS
GREENVILLE, SOUTH CAROLINA

CREATED FOR THE TEXTILE INDUSTRY

the DUROMETER
FOR TESTING WINDING DENSITY

Created to solve the problem of maintaining uniform density for unwinding in later processes, the DUROMETER saves time and money. Tests density of windings on spools, cones, bobbins, cops and package dyeing tubes.

Write today for bulletin R-8

Shore INSTRUMENT & MFG. COMPANY, INC.
90-35 VAN WYCK EXPRESSWAY, JAMAICA 35, N. Y.

Earl Smith has been appointed day supervisor of Mill No. 3, Cowikee Mills, Eufaula, Ala. He has been succeeded as night supervisor by **Roy Andrews.**

W. D. Smith has been named superintendent of the rayon and nylon divisions of Hathaway Mfg. Co., New Bedford, Mass.

E. L. Spence has been named superintendent of weaving for Cannon Mills Co., Kannapolis, N. C.

Arthur M. Spiro has resigned as assistant vice president of Robbins Mills, Inc., New York, N. Y.

James C. Teaver, Jr., has been appointed assistant treasurer of Callaway Mills Co., LaGrange, Ga., succeeding the late **C. G. Higginbotham.** He has been assigned to the HDV Division.

Arthur Tousignant has been elected vice president of Spofford Mills, Inc., Wilmington, N. C.

Jackson P. Turner, Jr., has been elected treasurer of Cabin Crafts, Inc., Dalton, Ga.

Ivan Waller has been appointed executive vice president and general manager of Chipman-La Crosse Hosiery Mills, Hendersonville, N. C.

Melville Weston has been elected to the board of Textron, Inc., New York, N. Y.

W. J. Whitehead has been named president of Wabasso Cotton Co., Three Rivers, Que.

OBITUARY

WILLIAM BUXMAN

As we go to press word is received of the death of William Buxman, assistant to the publisher and manager of TEXTILE WORLD for many years. He had retired from active duty December 31, 1953, after 45 years with McGraw-Hill Publishing Co., Inc.

His many friends in the textile industry will be saddened by the news of his passing.

Edward F. Addis, 61, vice president and treasurer of A. D. Juilliard & Co., New York, N. Y.

Frank K. Beattie, president of Beattie Mfg. Co., Little Falls, N. J.

Charles C. Bobo, 71, retired overseer of dressing for Dan River Mills, Danville, Va.

George E. Brigham, 88, retired assistant superintendent of Rhode Island Worsted Co., Stafford Springs, Conn.

Harry C. Doyle, treasurer of Irving Worsted Co., Chester, Pa.

Paul Groover, 55, executive vice president of Pacific Mills, Boston, Mass.

Clarence G. Higginbotham, assistant treasurer of the HDV Div. of Callaway Mills Co., LaGrange, Ga.

David Johnson, owner and president of the J & J Spinning Mills, Maiden, N. C.

Rudolph O. H. Johnson, 46, assistant treasurer of the United Elastic Corp., Easthampton, Mass.

J. Campbell Keighley, 73, retired president of Sayles Finishing Plants, Saylesville, R. I.

Alex Oliver, 63, president and founder of U. S. Knitwear Co., Inc., Baltimore, Md.

Winslow A. Parsons, 83, treasurer of Richmond Lace Works, Alton, R. I.

Thomas M. Roth, 51, assistant superintendent in charge of the cloth department of Chatham Mfg. Co., Elkin, N. C.

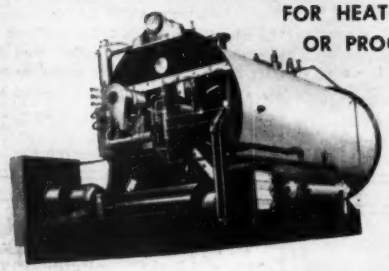
George H. Schuler, 59, director of the Technical Laboratory of E. I. du Pont de Nemours & Co., Inc., Organic Chemicals Dept., Deepwater Point, N. J.

Cornelius Stellingwerf, 54, general manager of Samuel Hird & Sons, plants at Clifton and Garfield, N. J.

Benjamin I. Ward, 84, president of Bellman Brook Bleachery Co., Fairview, N. J.

STEAM

FOR HEAT
OR PROCESS



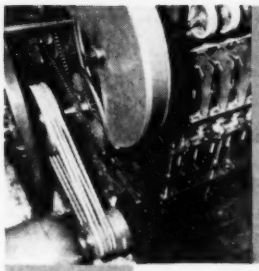
A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 618

SUPERIOR COMBUSTION INDUSTRIES
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg., Times Sq., New York N. Y.

Superior STEAM GENERATORS



HOW MERCURY CLUTCH SPEEDS PRODUCTION

Machine: WOOLEN SPINNING FRAME

Driven by: 15HP—1800 RPM Electric Motor.

Type of Operation: Spinning of woolen yarn.

Problem: To provide a smooth start to prevent breaking yarn on starting.

Solution: A Mercury Clutch was installed in April, 1948.

Results: The smooth gradual application of torque to the load eliminated ends down on starting thus improving production and the quality of the yarn. Eliminated the standard practice of jogging for start thus adding to the life of the motor and decreasing the time necessary for starting.

FREE BULLETIN: *Send for your free copy of the complete story about Mercury Clutches.*

MERCURY CLUTCH DIVISION
AUTOMATIC STEEL PRODUCTS, INC.
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CALDWELL TANKS—

First Choice of the Textile Industry!

Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps

WRITE US FOR SAMPLES AND QUOTATIONS

ROME, N. Y

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau*

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The advertising rate is $12.65 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. T.W.

SEND NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y. for October issue closing September 16th

SPECIFICATIONS
FOR
TURNER & HAWS ENGINEERING COMPANY
WEST ROXBURY, MASS.

SPIROKLEEN DUST COLLECTOR

This dust collector has forty-eight 18" diameter by 10'-0" high cotton cloth filter bags with a total air handling capacity of 26,400 C.F.M. when collecting dust and lint exhausted from twelve (12) napping machines.

The spiral aluminum elements installed inside each filter bag for continuously removing the excessive accumulation of collected material are driven by three (3) ⅓ H.P., 3 phase, 60 cycle, totally enclosed, ball bearing gearmotors. All components of the spiral drive assembly are of durable design and prelubricated. Dust sealed ball bearings are used throughout.

The prefabricated steel panel housing is arranged for field assembly by bolting and is suitable for either indoor or outdoor installation without modification.

The over-all dimensions of the collector are as follows: 24'-6" long, 19'-4" high, 9'-0" wide.

This collector will be shipped partially assembled and crated. The shipping weight will be approximately 9,000 pounds.

This collector has been in use for one (1) year.

For Sale by: ROCK HILL PRINTING & FINISHING CO.
ROCK HILL, S. C.

SEARCHLIGHT Equipment Spotting Service

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.) No charge or obligation.

First, read the dealer ads on the following pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

Searchlight Equipment Spotting Service
c/o Textile World, 330 W. 42nd St., N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

Searchlight Equipment Spotting Service
c/o Textile World, 330 W. 42nd St., N. Y. 36, N. Y.

Please help us locate the following used equipment:

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NAME ..... TITLE .....

COMPANY .....

STREET .....

CITY ..... ZONE..... STATE..... 9/54

POSITIONS OPEN

We can place—MANAGERS and Supts. worsted yarn mills; tricot mill exccutives, foremen and fixers; supt. southern mill combed yarn fabrics; supt. large cutting and sewing plant; weaving supt. pile fabrics.

OVERSEERS for cot. ring spinning, one who can speak French; fancy wstd. twisting; dyeing yarns and raw stock; woolen finish.; mule and frame win. spin.; folding and put-up dept.; woolen card. 3rd shift. Foreman sewing plant operations.

SECOND HANDS woolen card.; wool. frame spin.; wool. finish.; wool scour; asst. cot. dyer, pad and jigs.

MASTER MECHANIC with woolen mill exp.; head mechanic Whitin fancy twisters; chemists, chem. engineers and laboratory men for mills, also for demonstrating and selling; colorists and assist. colorists.

FIXERS Draper, Crompton & Knowles rayon looms (foreign); wool-waste salesman; hosiery salesman New Eng. territory; textile school instructors for weav. and chemistry; knit. mach. fixers; garnett foreman and fixers; boss card grinder; yarn salesman.

If you are available for one of the positions listed here, or any other executive position in textile, SEND US PROMPTLY YOUR RESUME. It will be in STRICTEST CONFIDENCE. No charge unless position is accepted through our Service.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
Telephone Liberty 2-6547
Over 55 Years in Business Placing and in Supplying Textile Mill Executives

MR. PRESIDENT
MR. PLANT MANAGER

We are in a position to supply top notch Textile personnel for your plant or office. All negotiations in strict confidence.

Inquiries welcomed.

FORTUNE PERSONNEL
18-E 41 St. New York 17, N. Y.
Murray Hill 5-1965

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

SELLING OPPORTUNITIES OFFERED

AGENT WANTED to handle Italian-made range of filling and roving bobbin stripping machines. These machines are extremely competitive in price, simple and efficient in operation and include the only automatic hopper feed for this purpose now available. RW-3579, Textile World.

WANTED — MANUFACTURER'S Representative covering mills doing package dyeing to add fast selling repeat item to present line on straight commission. Merit of item proven by many years of successful and repeated use. Supported by national advertising in textile journals and by mail. RW-3636, Textile World.

POSITIONS WANTED

RASCHEL MECHANIC Available, thoroughly experienced in all phases of raschel operation, warping, and quality control, can analyze and design fabrics. PW-3745, Textile World.

(Continued on page 330)

Additional Employment advertising on pages 330 & 331

As World's Largest Used Machinery Dealers,

CRESCENT Offers You Unmatched EXPORT KNOW-HOW

never before has CRESCENT been able to offer such EXCEPTIONAL machinery at such LOW PRICES

COTTON MACHINERY

3—Saco-Lowell 40" Single Process Pickers
1—Aldrich 45" Two Beater Single Process Picker, Year 1948
44—Whitin 40" R.F. Cotton Cards, 27" Doffers, 12" Coilers, 110/120s Wire with Abington strippers
7—Saco-Lowell Model 50 Combers, double side, 12 heads per machine, 12" coilers
24—Whitin Long Draft Spinning Frames, tape drive, 3-½" gauge, 2" rings, 240 spindles each
6—Whitin Model BB Twisters, 4-½" gauge, 3-¼" dia. rings, tape drive, 180 spindles each, 1940 Model
5—Saco-Lowell Tape Drive Twisters, 4-½" gauge, 3" dia rings, 144 spindles each
15—Saco-Lowell Tape Drive Twisters, 4" gauge, 3" rings, 160 spindles each
2—Foster Model 102 Winders, 100 spindles each, 5" paper tubes, motor driven
1—Universal #44 Roto Coner, 120 spindles, bakelite traverse rolls, 3° 30' paper cones
1—Universal #44 Roto Coner, 120 spindles, bakelite traverse rolls, 9° 15' paper cones
16—Foster 75A Coners, 6 spindles each, for 3° 30' paper cones, motor driven in gangs of 4 machines per motor, pineapple cone attachments
3—Sipp-Eastwood 800 End Magazine DX Creels, Type B, FW Tensions, Kinetic Stop Motions
1—Steam Ager, 72" face rolls, 12 feet long, 10 ball bearing top rolls, 9 ball bearing bottom rolls, 2—8" dia. rubber nip rolls
1—Van Vlaanderen 54" Embossing Machine with spare embossing and paper rolls, motor driven
1—60" Butterworth Swing Tenter Frame, opening to 50", stainless steel clips, electric opening (Suitable for widening)

WOOLEN AND WORSTED MACHINERY

18—Crompton & Knowles W-3 Automatic Looms, 92" between swords, 4 x 1 box, motor driven, 10 looms convertible type, 1946 Model
100—Crompton & Knowles W-2 Looms, automatic, 82" between swords, 4 x 1 box, motor driven
18—James Smith 3 Circle Noble Combs, 45-49 pins per inch, belt driven
5—Prince-Smith Intersecting Double Head Ball Gill Boxes
11—Saco-Lowell Intersecting Double Head 2 Ball Gill Boxes
4—Warner & Swasey Pin Drafters, dual heads, motor driven, 1948 Model
10—Prince-Smith Intersecting 2 Spindle Gill Boxes, 9 x 14 spool, belt driven
9—Whitin Ring Spinning Frames, Model BW, 4" pitch, 3" Herr self-oiling rings, 200 spindles each, motor driven
2—Whitin Model L Ring Trap Twisters, 188 spindles each, 3-¾" pitch, 3" self-oiling rings, 9" traverse, motor driven

5—Whitin-Schweiter Filling Winders, 30 spindles each, Model MS, motor driven
2—Riggs & Lombard "Fleetline" Yarn Conditioning Machines, automatic controls, motor driven
6—Riggs & Lombard 8 String Stainless Steel Dye Kettles, totally enclosed, motor driven
2—Riggs & Lombard 12 String Continuous Washing Machines, individually motor driven, pneumatic nips
2—72" Arlington Vacuum Scutchers with Nash Hytor Vacuum Pumps, motor driven

WARP TYING-IN MACHINES

2—Barber-Colman Model LC Portable Warp Tying-In Machines
1—Barber-Colman Model LL Portable Warp Tying-In Machine
1—Barber-Colman Model LS Portable Warp Tying-In Machine

35—Whitin Model B Ring Twisters, tape drive, 3-¾" gauge, 2-½" ring, 200 spindles each
24—Societe Alsacienne 400 Spindle Long Draft Spinning Frames with Telegno high draft, 2-15/16" pitch, 9" traverse, 1-13/16" dia. rings
1—Parks & Woolson 72" x 24" Full Decating Machine, equipped with new cylinder, Nash pump, 4 roll cooling rack and electric chain hoist, motor driven
1—Gessner Steam Cloth Press, single cylinder with Gessner hydrolizer unit equipped with vacuum extractor
1—Arlington 66" Stainless Steel 4 Bowl Crab, motor driven
1—Curtis & Marble 48" Fearnaught Picker, 1947 Model, with Bramwell Picker Feeder

And Other Unusual Machinery Opportunities At Several Convenient Locations

ALL OFFERINGS SUBJECT TO PRIOR SALE

TEXTILE MACHINERY—MACHINE TOOLS—ELECTRICAL EQUIPMENT

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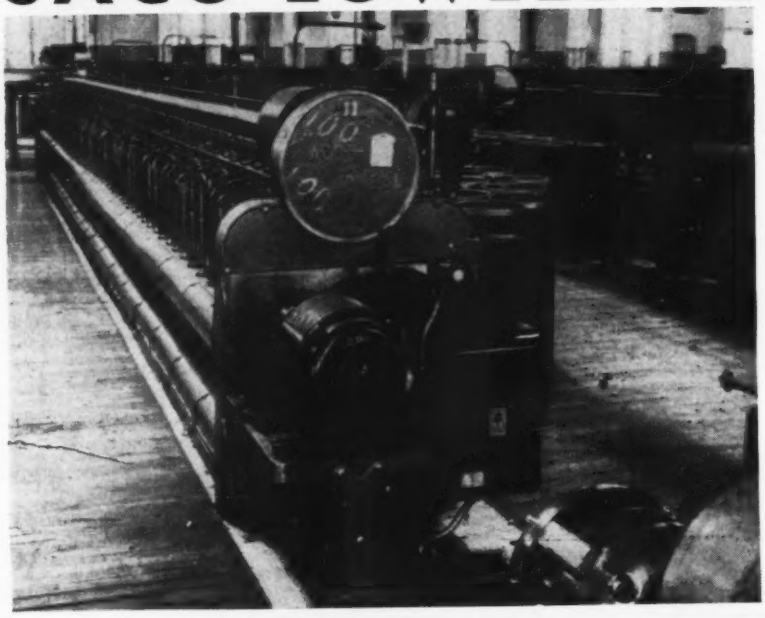
397 BAY STREET, FALL RIVER, MASS.—PHONE 7-9421
EXPORT OFFICE: 1450 BROADWAY, NEW YORK, N. Y.—PHONE LACKAWANNA 4-0700
SOUTHERN OFFICE AND WAREHOUSE: SPARTANBURG, S. C.—PHONE 5624

SACO-LOWELL SLUBBERS



1947 MODEL

Controlled Draft
J3 Long Draft
10 x 5
5 108 Spindle
550 v. 60 c. 3 p.
Motor Driven
14 102 Spindle
Belt Drive

Located On Mill Floor
As Operated

Excellent Condition

Immediate Delivery

A. F. MACHINERY Co., Inc.

P. O. Box 16 — Tel: Fall River 5-7432 — A. F. FYANS, *President* — Fall River, Mass.

S&K Where your $$$$ buy MORE

S.S. JIGGS	BUTTON BREAKERS
PALMER TENTER UNITS	DECATORS
QUETCHES	TUBERS
TENTER FRAMES	BEAMERS
CAN DRYERS	EXTRACTORS
CALENDERS	S.S. DYE TUBS

We have a large stock of CROMPTON & KNOWLES & DRAPER AUTOMATIC LOOMS

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Phone ARmory 4-7486

WANTED

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

WANTED
Atlas FadeOmeter FDA-R

in good condition.

W-3285, Textile World
330 W. 42 St., New York 36, N. Y.

WANTED

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2—OL20 Cop or bobbin winder
1—OL30 Cop or bobbin winder
60 spdl Atwood winder spdless
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Model 12 & 101 Foster winders

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CAMERON SLITTER AND REWINDERS,

62" 10-5, 45" 10-5, 45" 9-5, 50" 24-3A. Duplex constant tension, in operation.

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Chemicals — Pigments — Solvents
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1947 MODEL

Controlled Draft
108 Deliveries
Arranged in Heads of four deliveries
Five lines of Drafting Rolls
Synthetic Top Rolls
550 v. Motor Drive

WITH

6 Saco-Lowell LAP WINDERS

1948 Model
16 End, 9" LAP
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STAINLESS STEEL TANKS
STORAGE & MIXING

2—6000 gal. Vertical—used
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2—5000 gal. Vertical—used
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20—from 15 gal. to 1000 gal. sizes
15—Stainless Steel Jacketed Kettles, some with agitators.

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Textile 50" Cloth Mercerizer, Windsor & Jerauld 80' Clip Tenter with metal housing, Set of 25—50-½" Face Dry Cans, 50" S.S. Padders, 3 ton Kier, etc.

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17 **D & F Cards,** 48 x 60, Peralta, Tape Condensers—1949
13 **D & F Spinning Frames,** E & F, 120 spdls., 6½" ga.—1948-51
20 **Whitin & F. & J. Novelty Twisters,** 192 spdls., 3½" ga.
72 **C & K Looms,** W-3, 82", 8-¾" Bobbin, motor—1940-5
3 **D & F Pinless Dressers,** 92" w/compressor—1949
2 **D & F Hi-Speed Spoolers,** Model #60 & 40—1944
1 **P & W 2 cyl. 10 Contact Brush or Teasel Gig**—1950
2 **Hunter Squeezers or Padders,** 72", Model G—1951
1 **Hunter Carbonizing Range,** 78" wide, Dryer—1948
20 **P & W Single Teasel Gigs,** quadruple, 66½" x 40" dia.
1 **P & W Semi-Decater,** 70" wide x 36" dia., L-5 pump—1949
1 **P & W Brusher,** 4 cyl. 72" wide w/steamer—1950
1 **P & W Davidson Shear,** 66½". Floxdisposal—1945

COTTON—New England

1 **Centrifair Superior Cleaner**—1948
2 **Saco-Lowell #11 Condensers** w/auto feed system—1949
2 **Saco-Lowell Single Process Pickers,** 40" wide—1949
46 **Whitin 40" Cards,** 27" doffer, w/strippers, 12" coiler
20 **Platt 40" Cards,** 27" doffer, ind. motor—1951
20 **Saco-Lowell Spinning Frames,** 240 spdls., 3½" ga., tape
15 **Draper Twisters,** 96 spdls., 4" ring, 5" ga., tape, motor
5 **Saco-Lowell Twisters,** 129 spdls., 4½" ri., 5½" ga., tape, belt
21 **Spindles Whitin Schweiter Winder**—1946
1 **Entwistle Hi-Speed Warper,** 54½" wide, variable drive
2 **Foster Winders,** Model #102, wooden cones or tubes
192 **Draper Mod. D. Looms,** 40" 44" 50" 64", stop motions
17 **Draper Model P,** 44" cloth, stop motion, motor drive

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1 **Nat'l Loop Dryer,** Model E, 60', 106" sticks—1947
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1 **R. & L. Stainless Steel Enclosed Dye Kettle,** 4'—1948
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12 **Copper Dry Cans,** 60" x 23" dia.
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10—Dye jiggs, 50", 60,", 70".
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2—Agers, 20' L., 60"-64" W.

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2—Smith Drum Rotary Dyeing Machines, 300 lb. & 200 lb., in excellent condition; and Extractors, 40", 48", 60" American Monel Open Top; also Stainless or Monel laundry type Washers, 42 x 84" & 42 x 96", very reasonably priced.

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1—16 Spindle Sargent Balling Machine

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1—5 can Johnson 23" dia., 66" face, with quetch, size pan, beam take-up, motor driven. Operated by steam pressure. Excellent condition.

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One 10 H.P. Boiler, 15 lb./sq. in., natural gas fired.

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1—Hercules 48" Self Balancing Extractor open top side mounted Motor
1—V. V. 42" Self Balancing Extractor M. D.
1—Set of 21 Dry Cans 72" x 23"
1—54" Verduin Hydraulic Embosser
1—10 Color V. V. Ribbon Printing Machine
2—Van Vlaanderen Tubers 64"
3—Paterson Tubers 64"
2—Paterson Beamers 60"
1—Measuregraph 60" Variable Speed Tubing & Examining Machine
1—Hermas Measuring & Inspection Machine 58"
2—60 gal. copper Jacketed Kettles, with Agitators M. D.
1—Elliot & Hall Flat Folder 54"
Motors & Drives of Various Sizes

1—60" VERDUIN HYDRAULIC 40 TON CALANDER
6—60" VERDUIN S. S. JIGGS
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1—2 COLOR TEXTILE PRINT MACHINE 68"
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Practically new. Air operated, complete with Warner Electric Brake and 220 Volt AC to DC Converter.

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Complete with circulating system and Viscometer

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1945. Excellent condition

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1—10 CAN STAINLESS STEEL FINISHING MACHINE
24" diameter—32" face chain drive
FLETCHER SAMPLE LOOMS
Built to your specifications
4 C & K HEAVY DUTY WEBBING LOOMS 8-SPACES
1 C & K SAMPLE LABEL LOOM
100 KIDDE TENSIONS

2 TOLEDO PRINTWEIGHT DIAL SCALES

1—1941 ATWOOD D.D. TWISTER
1 lb. pkge. Model 110

1—1947 NASH #88 BOBBIN REFINISHER

1—1949 U. S. TEXTILE FACE DRIVE TWISTER
144 spindles DD.

4 MONARCH 3 UTILITY ATWOOD TWISTERS
DD MOTOR, ½ lb. PKGE. Complete with bobbins for Nylon or Hellenca

12 MONARCH 5 UTILITY ATWOOD TWISTERS
DD MOTOR, 1 LB. PKGE.
Complete with bobbins

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2—D&F 3 cyl. Iron WOOL CARDS, 60" x 60", mtrzd. Speed Reducer Drive, 120 End Tape Condensers.

2—D&F 3 cyl Iron WOOL CARDS, 60"x48" dia. cylinders, 120 end Tape Condensers.

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1—Gessner Vacuum EXTRACTOR, 72" Nash Hytor Pump, Motor, Link Belt P.I. Drive.

1—Hunter 26B FULLING MILL, B. B. S.S. Slide, Roller Chain driven.

16—C&K W3 LOOMS, 82", Auto. 4x1, 26 Harness, Motorized.

2—D&F KNIT GOODS NAPPERS, 80", with Tubular Turning Arms.

2—Gessner D. A. NAPPERS, 18 Rolls, 72", mtrzd.

1—P&W Davidson 3 blade 66½" SHEAR, Simco Static Eliminators, Ball Bearing equipped, individual motors on cutting parts, Brushes, etc., Folder Takeoff.

1—Terrell Model L Automatic BOBBIN STRIPPER, Return Conveyor, motorized unit.

1—Scott CLOTH TESTER, Model "Q", 800 lb. capacity, with platen Recorder and Motor Drive.

1—Barber-Colman WARP TYING MACHINE, Model 8E with "B" Knotters. Beam capacity 86" between heads.

1—Schweiter Auto. FILLING WINDER, Model MS, accommodating up to and including 10⅛" bobbin, mtrzd. unit.

3—Foster Model 102 CONE WINDERS, 100 spindles each, with emulsion attachments, nutaper cones, motorized units.

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1—Johnson 7 Can Slasher—$1200.00
12—Werner 50" S. S. Jiggs—Late Model
4—V. V. 60" Tensionless S. S. Jiggs—$1000.00 each
1—Hinnekens 60" S. S. Jigg—$700.00
1—60" Brushing Mach ne—$350.00
1—3 Roll 68" Hydraulic 30 Ton Calender—$4500.00
1—Hinnekens Boil Off—66"—Late Model
1—3 Roll 65" V. V. Calender—$3250.00
1—V. V. 54" Embosser—2 Roll—$1800.00
3—10' S. S. Dye Becks—$700.00 each
1—V. V. 48" Decatizer, Pump, Motors & Blanket—$1500.00
2—8' S. S. Dye Becks—$600.00 each
1—48" Eliot-Hall Flat Folder—$250.00
1—V. V. Tenter Frame—30' x 62"—S. S. Clips—$1650.00
Beamers—50" to 76"
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137 Draper, model XD 1946, 68" cloth, dobby
80 Draper, model XD 1942, 46" dbl. fork cam
32 Draper, model E 40" cloth cam
50 Draper, model E 50" cloth with dobbies
53 Draper, model K 42" cloth with dobbies
24 C&K model S-6 1951 72" b-swords
32 C&K model S-5 56" b/swords 2 x 1
100 C&K model W-3 76"
475 Draper X looms 40" & 44" cloth cam 220V
48 Draper XP looms, 60" cloth, 220V cam

Drawing-in frames, stafford thread cutters, lease rods, temples, friction let-offs, Roper let-offs, heddle frames, heddles, drop wires—all sizes—send sample, loom beams, weavers knotters, filling boxes, dobbies, cloth inspecting machines, whip rolls, brackets for 24" beams, midget feelers, etc.

1 Flax Plant, mach'y. on line & tow system
1 Twin wire heddle-making plant
1 Rayon Weaving Plant, complete, 288 looms
1 Cotton Spinning & Weav. plant, 572 looms
1 P&A Single Process Picker, 37"
2 S/L Single Process Pickers, 40"
4 H&B Drawing Frames, 5 delivery, 10" coil
28 H&B & T&S Cards (English) 37", 10" coilers
25 H&B American Cards, 40"
42 Whitin Tape Drives, 3¼" g. 240 sp. frames
2 H&B Twisters, 5½" g. 4½" ring, band drive
2 B/C #69 HW Warpers Hi-Speed
1 B/C Cheese Creel VC318 468 ends 1949
3 Universal Creels, 400 end cotton wool
1 Cocker 9 can 60" 1942 30" SS drum
1 Van Vl, 7 can slasher, 66" pelzin drive
1 100 sp. Abbott Winder, 7⅞" bobbin 1951
4 12 sp. Schweiter Winders, 7⅞" bobbin 1949

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TEXTILE AUXILIARIES

WE SPECIALIZE IN FINISHING MACHINERY

THESE ITEMS IN STOCK FOR IMMEDIATE DELIVERY

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1—Morrison two-roll 50" Hydraulic Quetch with Stainless Steel Pan and Motor
1—Van Vlaanderen three-roll 60" Quetch: also, 3—two-roll 50" Quetches
1—Morrison 50" three-roll Silk Calendar
1—Butterworth 90' x 60" Tenter Frame, top opening stainless steel chain
1—Butterworth 60' x 60" Tenter Frame, top opening stainless steel chain
1—Winsor & Jerauld 60' x 60" Tenter Frame, top opening stainless steel chain
1—Motorized "Economy" Cloth Baling Press
1—80" and 1—60" Scutcher
1—72" Hunter 15 ton Hydraulic Pad
Also, Dry Cans from 30" to 120"; also, spare Pad Rolls and Calender Bowls.
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100 No. 50 Universal Coners—"L" Drive Gears Gainers-Pineapples

2—YARN CONDITIONING BOXES—1—H&W 1950—TYPE ST-2

1—SIPP WARPER & CREEL—800 ENDS

8—FIDELITY 2 ARM REELERS

75—C&K S-5—56" LOOMS WITH LARGE S-6 CLUTCHES

21—Atwood D. D. Up-Twister 220 Sp.—½ Lb. Pkg.—Double Motor—1—STROBOTAC

1—HERMAS INSPECTION FRAME—82" with 1950 TRIM MASTER

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"Searchlight" Advertising

EMPLOYMENT

(Continued from page 324)

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To lead Research Group in the application, identification and evaluation of producer finishes.

PURPOSE:
To create and evaluate producer finishes designed to provide satisfactory processing characteristics for continuous filament and staple synthetic fibers.

REQUIREMENTS:
At least a B.S. degree (Ph.D. preferred) with a minimum of ten years applicable experience. Salary commensurate with experience.

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POSITION WANTED. Textile Chemist. Research, Administrative and Auxiliaries M'fg. background. Heavy Dyehouse Experience. Seeks Challenging position Technical Sales, Auxiliaries M'fg, Dyeing and Finishing. 32, Married. PW-3616, Textile World.

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TEXTILE ENGINEER — B.S. & M.S. degrees — 14 years experience — production, sales-service, market development, consulting in spinning, slashing and weaving, fabric development, inventor, technical writer — working knowledge of all processing from raw fiber to finished fabric natural and synthetic fibers — young — now holding management position — seeking better opportunity. PW-3699, Textile World.

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Highly Experienced trained Textile Technician wishes the cooperation of a financially responsible party in the designing and development of a new type of knitting machinery. BO-3581, Textile World.

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Experimental Weaving, short yardages, Fabrics for special purpose woven. SS-3690, Textile World.

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For Sale or Lease, Building constructed of Brick Steel and concrete 100' x 112' lot 350' Front 500' deep. Suitable for Looms or warehouse. Write Box 202, Kings Mountain, N. C.

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Address copy to the Classified Advertising Division

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330 West 42d St., New York 36, N. Y.

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50" XD DRAPER
20-HARNESS DOBBY,
1948-1950

JOHNSON SLASHERS, 7-DRUM,
60"x30", STAINLESS STEEL,
CREELS, CONTROLS

WHITIN AUTO. QUILLERS
HERMAS SHEARER

ABBOTT AUTO. QUILLER, 120 SP.
HACOBA AUTO. QUILLERS, 88 SP.

ATWOOD 8 OZ. UPTWISTERS
COCKER 9-DRUM SLASHER, S.S.

JOHNSON 5-DRUM SLASHERS

ATWOOD 14 OZ. UPTWISTERS
USTER WARP KNOTTER

C & K S-3, 56" R.S.,

C & K, W-3, 82" R.S., 4 x 1 AUTO.
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(Continued from pages 324 & 330)

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AVAILABLE FOR MEN
WITH EXPERIENCE IN

- **SPINNING**
  COTTON, AMERICAN, WOOLEN, WORSTED, OR TOW SYSTEMS
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  TRICOT, CIRCULAR, OR RASHEL
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  TECHNOLOY FOR SPECIAL FINISHING AND DYEING OF SYNTHETIC FIBERS

PERSONS APPLYING SHOULD BE TECHNICAL COLLEGE GRADUATES, AGE 32 TO 38, WITH 8 TO 10 YEARS EXPERIENCE IN ANY OF THESE FIELDS OR COMBINATION. SUPERVISORY EXPERIENCE DESIRABLE.

Give age, education, experience, and salary requirements.

P-3650, TEXTILE WORLD
330 W. 42 St. New York 36, N. Y.

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20—Luther and Morrison Thread Glazers

1—Baines (English) Automatic Thread Spooler

10—Obermaier Stainless Steel Package Dyers

2—Fletcher 48" Stainless Steel Extractors

James E. Fitzgerald 10 PURCHASE ST., FALL RIVER, MASS.
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MODERN COTTON Machinery

formerly owned by
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PICKING	4—38½" F-5 Saco Lowell Hopper Feeders 5—40" Kitson 2-beater single process pickers. Saco Lowell hookup, blending reserves 1937
CARDS	85—Saco Lowell 40"—12" Coiler 23—Whitin 40"—Model H
DRAWING	160—Del. Saco Lowell—4 del. per frame
ROVING	8—Woonsocket 9x4½ Slubbers—Whitin Interdraft—120 sp. ea. 2—Saco Lowell 11x5½ Slubbers—84 sp. ea.
SPINNING	17—Saco Lowell 3¼" ga., 2¼" r., equipped with Shaw l.d., 252 sp. ea. 31—Saco Lowell 3¼" ga., 2¼" r., Whitin l.d., 252 sp. ea.
WINDING & WARPING	2—Foster #102 Paper Cone Winders—100 sp. ea. 3—Universal #44 Roto Coners—120 sp. ea., for paper cones.

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533 Main St. Melrose 76, Mass.
MElrose 4-4980

COMER MACHINERY CO., INC.
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To plan, execute and evaluate development programs on staple and continuous filament synthetic fibers. To provide technical assistance to Sales Department as required.

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To supervise and evaluate development projects on tricot, fullfashion, and other knitting operations.

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To supervise and evaluate development projects in weaving. To provide technical assistance to Sales Department as required.

APPAREL EVALUATION:
To develop new apparel uses for staple and continuous filament synthetic fibers. To provide technical assistance to Sales Department as required. Should know textile processing methods, fabric construction, and dyeing and finishing.

REQUIREMENTS:
Applicants must have at least a B.S. degree in textiles or textile engineering and five years experience in above field of interest. Salary commensurate with experience.

Send resume to
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BOMBS...OR FIRE...OR FLOOD...OR TORNADO ...you can handle them if you act now.

Let's face it... the threat of war and the atomic bomb has become a real part of our life—and will be with us for years. Fires, tornadoes and other disasters, too, can strike without warning.

Whatever the emergency is, everybody's going to want help at the same time. It may be hours before outside help reaches you. The best chance of survival for you and your workers—and the fastest way to get back into production—is to know what to do and be ready to do it. Disaster may happen TOMORROW. Take these simple precautions TODAY:

☐ **Call your local** Civil Defense Director. He'll help you set up a plan for your offices and plant—a plan that's safer, because it's integrated with community Civil Defense action.

☐ **Check contents** and locations of first-aid kits. Be sure they're adequate and up to date. Here, again, your CD Director can help. He'll advise you on supplies needed for injuries due to blast, radiation, etc.

☐ **Encourage personnel** to attend Red Cross First-Aid Training Courses. They may save your life.

☐ **Encourage your staff** and your community to have their homes prepared. Run ads in your plant paper, in local newspapers, over TV and radio, on bulletin boards. Your CD Director can show you ads and official CD films or literature that you can sponsor locally. Set the standard of preparedness in your plant city. There's no better way of building prestige and good community relations—and no greater way of helping America.

Act now . . . check off these four simple points . . . before it's too late.

Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. This unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a valuable source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service in which you are currently interested. Then consult in the index the page numbers that are followed by that letter.

A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting and Winding Equipment and Supplies.

This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Acme Steel Co.	194	P
Acrometal Products Inc.	315	T
Allen Mfg. Co.	293	O
Allentown Bobbin Wks, Inc.	285	T
Allis-Chalmers Mfg. Co.	127, 172-173	F Q
Alvey Conveyor Mfg. Co.	262	P
American Air Filter Co., Inc.	206-207	A
American Bemberg Corp.	22	G
American Crayon Company	297	E I R
American Cyanamid Co. Organic Chemicals Div.	141	C
American Lava Corp.	171	I RT
American Moistening Co.	10	A
American Monorail Co.	218	D
American Steel & Wire Div.	221	O
American Viscose Corp.	30-31	G
Appleton Machine Co.	36	E
Armco Steel Corp.	273	O
Armour & Co., Industrial Soap Dept.	255	C
Armstrong Cork Co.	174-175	T
Askania Regulator Co.	234	F K
Atlanta Paper Co.	230	P
Atlantic Rayon Corp.	294	G
Automatic Steel Products, Inc. Mercury Clutch Div.	323	Q
Babcock & Wilcox Co., The	123	H O
Bahnson Co.	184	A
Barber-Colman Co., Controls Div.	289	K
Textile Div.	224	R
Barnes Textile Associates, Inc.	312	N
Bemis Bros. Bag Co.	254	P
Benjamin Electric Mfg. Co.	281	F
Bersworth Chemical Co.	311	C
Boger & Crawford	309	G
Brush Electronics Co.	285	K
Buffalo Forge Co.	48	A
Bullard Clark Co., The E. H. Jacobs Northern Div.	119	R
Butterworth & Sons Co., H. W.	104	E
Caldwell Co., W. E.	323	B E
Carbic-Moss Corp.	110	C
Carter Traveler Co., Div. of Carter Inc., A. B.	265	RT
Celanese Corp. of America Chemical Div.	271	C
Century Electric Co.	45	F Q
Charlotte Chem. Lab., Inc.	319	C

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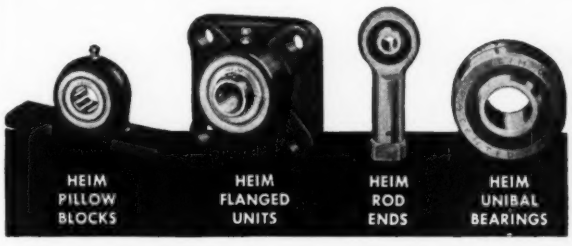

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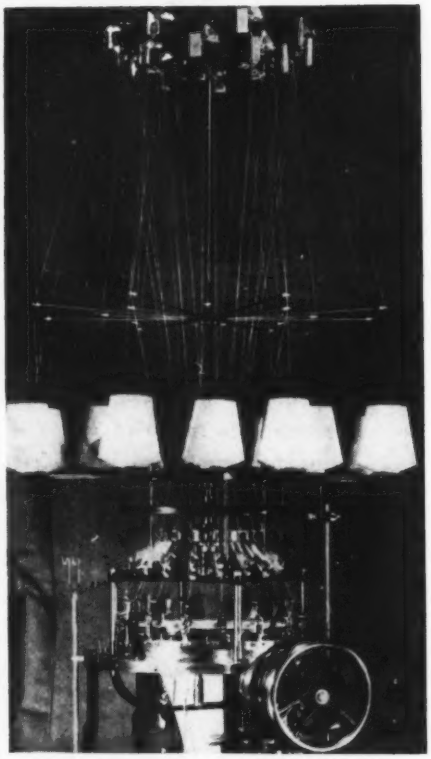

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Chemstrand Corp., The	199	G
Ciba Co.	283	C
Cities Service Oil Co.	247	M
Clark Equipment Co., Industrial Truck Div.	169	P
Clinton Foods Inc.	212	C
Clipper Belt Lacer Co.	299	Q
Cocker Mach. & Fdry. Co.	226	R
Cole Mfg. Co., R. D.	302	B E
Colton Chemical Co.	292	C
Columbia-Geneva Steel Div.	221	O
Columbia-Southern Chem. Corp.	112	C N
Commercial Factors Corp.	2nd Cover	
Corn Products Refining Co.	220	C
Crane Co.	32	H
Crane Mfg. Co.	296	L
Crompton & Knowles Loom Wks.	13	R
Crucible Steel Co.	15	O
Custom Scientific Instruments Inc.	295	K
Cutler-Hammer, Inc.	189	F
Darnell Corp., Ltd.	298	P
Dary Ring Traveler Co.	304	T
Dayton Rubber Co., The Textile Div.	180-181	RT
Deutscher Spinnereimaschinenbau, Ingolstadt	323	T
Diehl Mfg. Co.	185	F Q
Dinsmore Mfg. Co.	307	F
Dixie Leather Corp.	236	QR
Dobeckmun Co., The	219	G
Dodge Mfg. Corp.	40	Q
Dolge Co., C. B.	290, 298	B
Dommerich & Co., Inc., L. F.	18	N
Dow Chemical Co.	259	C
Draper Corporation	1, 144	R
du Pont de Nemours & Co., E. I. Dyestuff Dept.	17	C
Electrochemical Dept.	275	C
Plastic Div.	231-232	O
Durant Mfg. Co.	260	K
Edda International Corp.	198	R
Engineered Plastics, Inc.	258	T
Fairbanks Co., The	270	P
Fidelity Mach. Co., Inc.	241	L T
Finnell System, Inc.	186	D
Fiske Bros. Refining Co., Lubriplate Div.	306	M
Foster Machine Co.	14	T
Frankl Associates	279	RT
Gair Co., Inc., Robert	43	P
Gastonia Brush Co.	319	R
Gates Rubber Co.	182	Q
General Dyestuff Corp.	35	C
General Electric Co.	204-205	F Q
General Tire & Rubber Co. Industrial Products Div.	295	L RT
Gessner Co., David	287	F
Goodrich Chemical Co., B. F.	139	C
Goodyear Tire & Rubber Co.	9	
Graton & Knight Co.	236	QR
Griffin & Son, Ira	315	R
Gubelin International Corp.	261	T
Guider Specialty Co.	296	F
Gulf Oil Corp.— Gulf Refining Co.	202-203	M
Harwood & Son, Geo. S.	298	T
Haskell-Dawes Machine Co., Inc.	292	T
Hay Leather Co., Inc., Jas. E.	282	T
Hayssen Mfg. Co.	252	P R
Heim Co.	333	
Heineman Corp., O., Div. of Aetna Industrial Corp.	320	G
Herbert Products Inc.	299	T
Hermas Machine Co.	288	F
Herr Mfg. Co.	222	T
Heyden Chem. Corp.	243	C
Hinde & Dauch	238	P
Hinnekins Machine Co., Inc.	302	F
Howard Bros.	188	T
Huyck & Sons, F. C.	316	F RT
Hyatt Bearings Div., General Motors Corp.	167	O Q
Ideal Industries, Inc.	223	T
Industrial Rayon Corp.	42	G
Industrie-Werke Karlsruhe	336	F
Ives Co., L. T.	308	L
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Jenkins Bros.	195	H
Jiffy Textile Marker Co.	320	F L R
Johnson Corp., The	315	H
Johnson Machine Wks., C. B.	276	R
Keever Starch Co.	214	C
Kenwood Mills, Noone Industrial Fabrics Div.	316	F RT
Kidde & Co., Inc., Walter	227	B
Kuljian Corp., The	319	N

Lane & Bros. Inc., W. T.	335	P
Laurel Soap Mfg. Co.	235	C
Leighton Machine Co.	264	L
Lewellen Mfg. Co.	306	
Link-Belt Co.	7	Q
Lockwood Greene Engineers, Inc.	16	
Loper Co., Ralph E.	321	N
Louden Machinery Co.	229	D P
Lubriplate Div., Fiske Bos. Refining Co.	306	M
Lunkenheimer Co.	34	H
Manhatten Rubber Div.	50	Q
Manheim Mfg. & Belting Co.	269	Q
Manton-Gaulin Mfg. Co., Inc.	192	
Maple Flooring Mfrs. Assn.	272	B
Marquette Metal Products Co.	157	T
Marshall & Williams Corp.	299	E
Mathieson Chemical Corp.	2	C
M-B Products	322	T
McBride, E. J.	266	R
Meese, Inc.	318	
Mercury Clutch Div. of Automatic Steel Prods., Inc.	323	Q
Metlon Corp.	41	G
Miller Fluid Power Co.	37	E H O
Milton Machine Works, Inc.	321	
Minneapolis-Honeywell Reg. Co. Industrial Div.	38-39	K
Monsanto Chemical Co., Inorganic Chemical Div.	106	C
Textile Chemical Dept.	24	C
Mount Hope Machinery Co.	150-151	E
Muller, Jakob	279	R
Nash Co., J. M.	287	D RT
National Aniline Div., Allied Chem. & Dye Corp.	23	C
National Ring Traveler Co.	165	T
National Tube Div.	221	H O
National Vulcanized Fibre Co., Lestershire Spool Div.	256	RT
N. Y. & N. J. Lubricant Co.	193	M
Nopco Chemical Co.	21	C
Oakite Products, Inc.	161	C
Oilgear Co., The	33	H Q
Olin Mathieson Chem. Corp.	2	C
Onyx Oil & Chem. Co.	51	C
Pabst Brewing Co.	314	C
Package Machinery Co.	121	P
Page Fence Ass'n.	289	B
Parks-Cramer Co.	200-201	A D
Parks & Woolson Machine Co.	288	E
Penick & Ford Ltd.	216	C
Perfecting Service Co.	290	H
Pfister Chem. Works	239	C
Pharma Chem. Corp.	110	C
Pick Mfg. Co.	316	E
Pittsburgh Coke & Chem. Co.	108	C
Polymer Southern	300	C
Powell Co., Wm.	12	H
Powell Valves	12	H
Precision Gear & Machine Co.	310	Q
Proctor & Schwartz, Inc.	246	E
Ragan Ring Co.	317	T
Raybestos-Manhattan, Inc., Manhattan Rubber Div.	50	Q
Reeves Pulley Co.	244	Q
Reiner Inc., Robert	215	E R
Reliance Elec. & Eng. Co.	176-177	F
Robert & Company Associates	248	N
Roberts Company	163	T
Rohm & Haas Co.	303	C
Rollway Bearing Co., Inc.	28	O Q
Rome Soap Mfg. Co.	323	C
Roto-Ties Co.	297	L
Royce Chem. Co.	117	C
Rumford Chemical Works	263	C
Ryerson & Son Inc., J. T.	282	O
Saco-Lowell Shops	8	T
Sandoz Chemical Works	26-27	C
Sant' Andrea Officina Meccanica	279	T
Sarco Co., Inc.	225	H K
Sargent's Sons Corp., C. G.	240	E
Scherr Co., Inc., George	320	K
Schlafhorst & Co., W.	159	RT
Schlumberger & Cie.	291	T
Schweiter Ltd.	6	T
Scott Testers Inc.	307	K
Selig Co.	294	D
Servel, Inc.	257	A
Shepard Niles Crane & Hoist Corp.	251	P
Shore Instrument & Mfg. Co., Inc.	320	K
Simco Co.	300	L RT
Sirrine Co., J. E.	320, 3rd Cover	N
SKF Industries, Inc.	178-179	O Q
Smith, Drum & Co.	20	E
Snap-On-Tools Corp.	280	B H
Socony-Vacuum Oil Co.	44	M
Solvay Process Div., Allied Chem. & Dye Corp.	267	C

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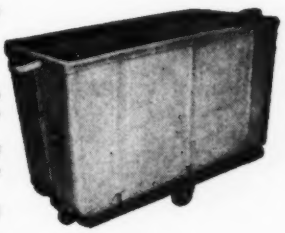

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Southern Shuttles Div., Steel Heddle Mfg. Co.	217	R
Spaulding Fibre Co., Inc.	11	P T
Square D Co.	213	F
Staley Mfg. Co., A. E.	197	C
Standard Mill Supply Co.	295	E
Standard Pressed Steel Co.	321	O
Steelcote Mfg. Co.	317	B
Steel Heddle Mfg. Co.	217	R
Stein Hall	297	C
Stephens-Adamson Mfg. Co.	305	O Q
Stewart Iron Works Co., Inc.	296	B
Stop-Motion Devices Corp.	334	L
Stowe-Woodward, Inc.	125	E
Sun Oil Company	140	C
Superior Combustion Industries, Inc.	323	Q
Supreme Knitting Mach. Co., Inc.	245	L
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Sylvania Electric Prod. Co.	277	F
Talcott, Inc., James	291	N
Taylor Co., Halsey W.	286	N
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Taylor-Stiles & Co.	293	T
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Torrington Co., The (Needles)	19	L
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Trane Co.	46-47	A
Turbo Machine Co.	5	L
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U. S. Steel Supply Div.	221	O
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Versenes Inc.	311	C
Victor Ring Traveler Co.	196	T
Virginia Electric & Power Co.	268	N
WAK Industries	321	K
Watson-Williams Mfg. Co.	190	R
Wayne Mfg. Co.	290	T
West Point Foundry & Mach. Co.	208-209	R
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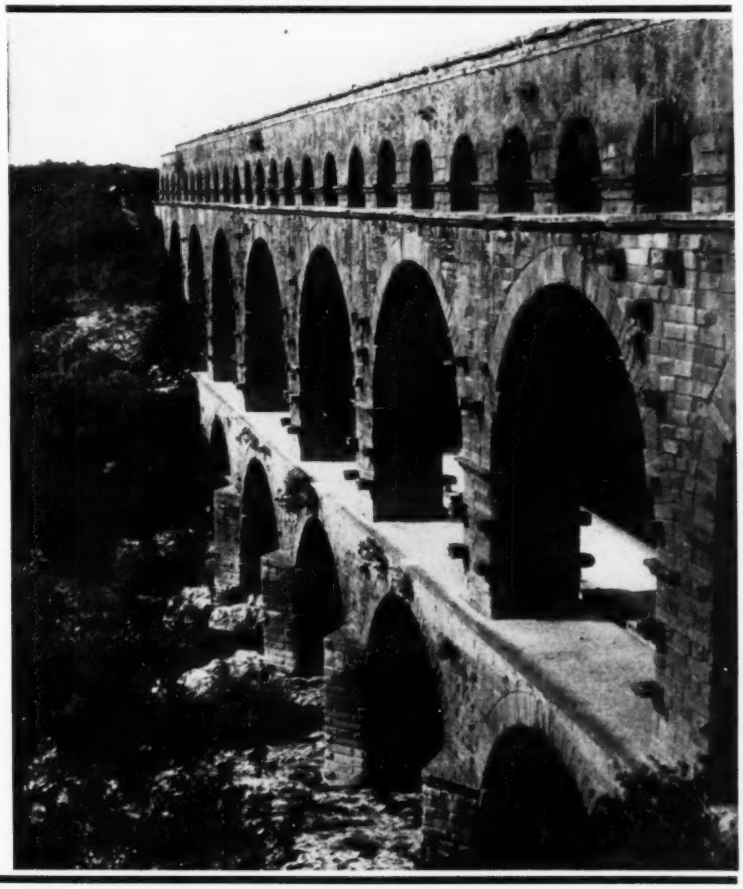

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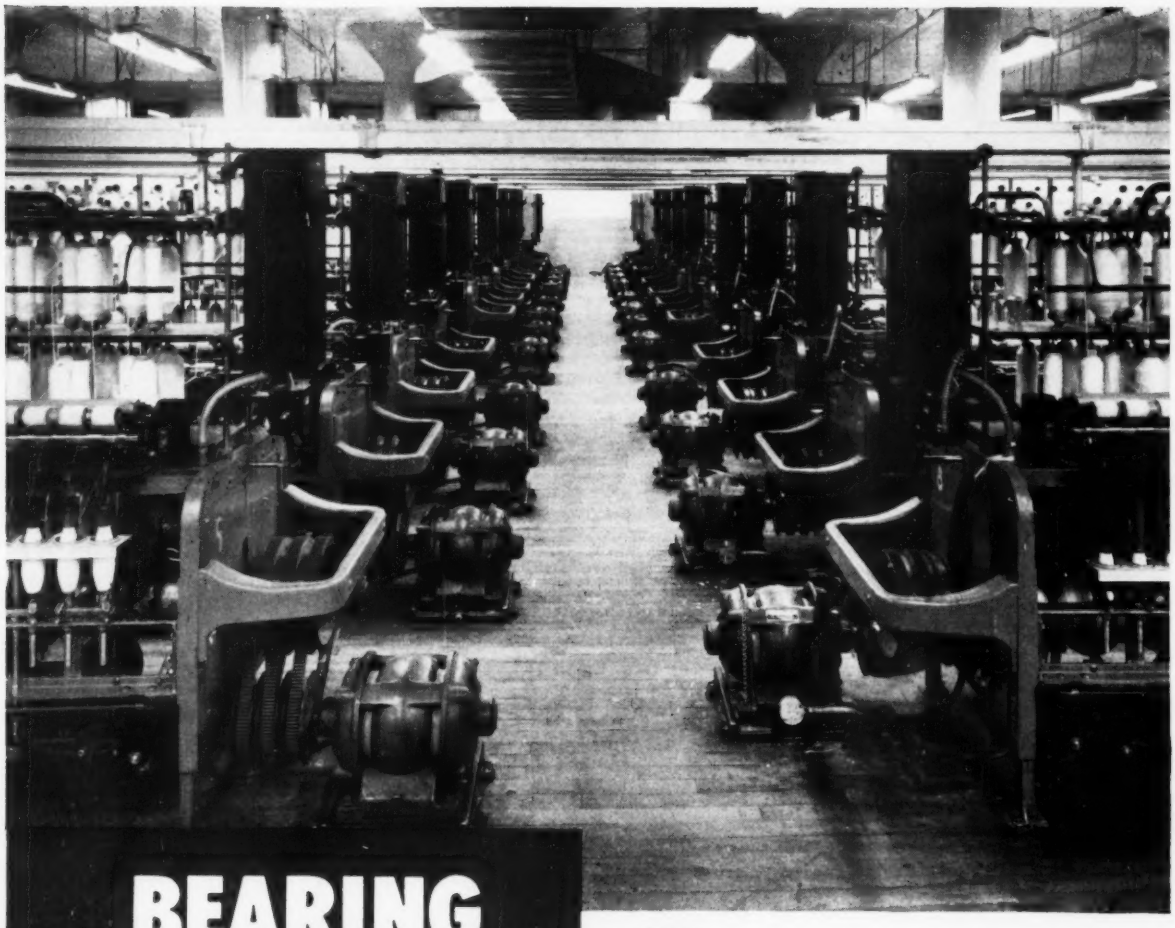

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